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Award Number 91MM1597

TITLE: Deployable Casualty Data Collection

PRINCIPAL INVESTIGATOR: LTC John Hagmann

CONTRACTING ORGANIZATION: Uniformed Services University of Health Sciences
Bethesda, Maryland 20814-4799

REPORT DATE: October 1997

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	October 1997	Final (5 Aug 91 - 30 Sep 97)

4. TITLE AND SUBTITLE
Deployable Casualty Data Collection

5. FUNDING NUMBERS
91MM1597

6. AUTHOR(S)
LTC John Hagmann

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Uniformed Services University of Health Sciences
Bethesda, Maryland 20814-4799

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

14. SUBJECT TERMS
Collection; Casualty

15. NUMBER OF PAGES
133

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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Executive Summary

This report details a series of Casualty Data Access Research Projects (CDARP) that were funded by the U.S. Medical Research and Development Command and undertaken at the Casualty Care Research Center, Department of Military and Emergency Medicine, Uniformed Services University of the Health Sciences.

The purpose of the CDARP was to expand the access to existing and potential casualty data. The CDARP had three distinct aims, namely:

1. To identify and assess the availability of casualty databases from militarily relevant multi-casualty events.
2. To develop a plan for rapidly deployable data collection teams to capture perishable information concerning injury and death from militarily relevant multi-casualty events, utilizing standardized methodology and data sets.
3. To develop a specialized injury severity scoring system which would be applicable to military penetrating trauma as well as other military and non-military injuries.

Planning and preparation of multiple casualty events, both military actions and national disasters, is primarily based upon past experience. Unfortunately, actual data from military conflicts and similar civilian situations are rare, often incomplete, and apply only to large groups or units which combine a variety of environments and risk factors. Additionally, the growing importance of low-intensity conflict has resulted in detailed planning requirements at lower unit levels. When unit and environment-specific data are available and made accessible, they can validate planned approaches and address issues at the engagement level.

A system for prospectively collecting such data is the ideal and ultimate goal of these efforts. However, there are reports that many sources of casualty data exist around the world. The synergistic combination of multiple databases which are accessed through a common system would surpass the value of any of the data sets taken individually. U.S. civil and military archive, collections from previously inaccessible sources, such as the former USSR and East Bloc Countries, as well as other nations, may all have accessible data which could provide new information and insight when combined. The current effort investigated the existence, availability, quality and compatibility of these data. International cooperation was sought.

Excellent contacts were made both within and outside of the U.S. Department of Defense (DoD) community. Aim One of the project was to identify International research co-investigators and the data sources available to them. Investigators were identified in Russia, Israel, the United Kingdom, Germany and France and they enthusiastically supported this effort throughout the study period. However, it was a significant finding, and rather remarkable to learn, that many of the casualty data sets that are frequently alluded to within the research community are actually of little use for quantitative analyses. Many of these data sets exist primarily as anecdotal reports and not as hard data. Those that do exist as hard data invariably occur as written reports, are often not centrally located and are time consuming to collate and analyze.

The most comprehensive single-source data set available was held at the Kirov Institute, Russia, and comprised medical records from the conflict between Russia and Afghanistan, during which there were some 15,000 Russian troops killed and over 50,000 injured. Analyses have been carried out on 4,000 of records. Some of the most significant findings of these analyses have been the relatively high percentages of casualties presenting with multiple injury trauma (25%) and those that require specialized medical care (10%) at all echelons of care from the point of injury. However, the major obstacle to processing the data of these records is that they are all held as paper records but the computerization of these records would greatly enhance the analytical processes. As a result of this program, an agreement was signed between the Department of Defense of the United States of America and the Ministry of Defense of the Russian Federation on the Reciprocal Education Program for Military Medical Personnel. Exchange visits between U.S. military personnel and their Russian counterparts took place directly as a result of this program and a range of subject matter areas that would be of mutual interest and benefit for future research was drawn up. Other potential sources of casualty data were identified in Israel, Germany, the United Kingdom and Sarajevo that should be followed up during further projects.

A system for prospective collection of data must be based on an effort that remains separate from clinical care. All efforts to collect casualty data through the use of the medical support system have failed in significant ways. Aim Two was directed at addressing this issue by identifying the components necessary for the infrastructure for rapidly deployable data collection teams, that would be capable of capturing perishable information, according to a standardized methodology and format. Significant progress was made towards the development of a data collection instrument. It was established relatively early on during the project that no single resource was available that could provide all the information necessary to develop a data collection instrument. Consequently, numerous medical resources were consulted to establish lists of information that would be required for inclusion in such a data collection instrument. These consultations resulted in the production of a comprehensive list of data fields that were collated and eventually established as data fields for a data collection instrument (database). In conjunction with the development of the data collection instrument, detailed plans were developed for the implementation of the instrument in an operational environment.

Aim Three addressed the need for compatibility between data sets collected from civilian events and those obtained from military events. Measuring the severity of injury is critically important for controlling case mix in study populations and making comparisons across populations. A common methodology which is valid for rating the severity of both military and civilian penetrating trauma would facilitate the use of civilian data for combat casualty care planning. Currently available methods, however, were identified as being inadequate for characterizing the unique nature of wounds due to high-velocity military weapons. This research effort looked at the potential for adaptation of the existing civilian scoring methodology to produce increased accuracy and validity when applied to penetrating military trauma.

Significant progress was made in developing a specialized injury scoring system. Areas where existing severity scoring methodology inadequately characterizes military wounding were identified from and analysis of the "Wound Data and Munitions Effectiveness Team" (WDMET) study. These topical areas of severity scoring deficiency should be used to facilitate consensus

modifications of the scoring methodology by a group of experts using the Delphi decision-making methodology. Experts should be selected on the basis of both their knowledge of civilian and military trauma care, and their familiarity with the science of injury severity scoring. Following the development of modifications to the scoring system, the proposed changes should be validated using actual data available from the WDMET study.

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Introduction

This report describes efforts to expand the access to existing and prospective militarily relevant casualty data. This project had three main aims namely:

1. To identify and assess the availability of casualty databases from militarily relevant multi-casualty events.
2. To develop a plan for rapidly deployable data collection teams to capture perishable information concerning injury from militarily relevant multi-casualty events utilizing standardized data sets.
3. To develop a specialized injury severity scoring system which will be applicable to military penetrating trauma as well as other military and non-military injuries.

AIM ONE: ASSESSMENT OF CASUALTY DATABASE AVAILABILITY

Planning and preparation for multiple-casualty events, both military actions and national disasters, are based upon past experience. Unfortunately, actual data from military conflicts and similar civilian situations are rare, often incomplete, and apply only to large groups or units that combine a variety of military environments and risk factors. Much of the data from former military conflicts has been collected at theater level and is therefore of little use in predicting the assets needed, or casualties expected, from a specific unit in a particular environment. For example, knowing how many soldiers were wounded in the European Theatre in the Second World War is of little predictive value. However, knowing the percent wounded in a modern armor engagement in open terrain could be very valuable to future planning efforts.

In recent times, the scale of military conflict has been reduced, but the growing importance of low intensity conflict situations has resulted in the need for detailed planning requirements at lower unit levels. When unit and environment specific data are available and made accessible, they can validate planned approaches and address many issues at the engagement level, such as demonstrated by the Wound Data Munitions and Effectiveness Team (WDMET) database of nearly 8,000 Vietnam casualties, and other U.S. casualty data. Other non-U.S. data collections that are known to the Casualty Care Research Center (CCRC) of the Uniformed Services University of the Health Sciences (USUHS) include those from the British Falkland Campaign and Northern Ireland terrorist actions. The assembly of a number of smaller databases into a common framework could help provide the type of information that is currently lacking.

The synergistic combination of multiple databases that are easily accessed through a common system will surpass the value of any of the data sets taken individually. U.S. civil and military archives, collections from previously inaccessible sources such as the former Eastern European Block countries, as well as other nations, may all have accessible data which could provide new information and insight when combined. These collections of casualty data are of little value, however, unless they are first identified and then compiled into a compatible format and then organized and made accessible for comparison and study. Even small collections from a specific environment can be useful when considered as part of a series of databases. This project will

identify sources of relevant data collections and make efforts to gain access to theses data so that, in a future effort, they may be organized into useable computerized databases.

The information obtained through this project would potentially allow the development of an organized approach to the timely collection, organization, and compilation of identified data into a computerized database. Such a database would be extremely important in providing an accurate assessment of expected personnel attrition and medical resources needed under a variety of combat or emergency situations. This data would also provide useful information in determining preventative care and initial / emergency treatment regimens. The collection of information from a wide variety of circumstances and areas of the world would enable a more specific and accurate analysis of the medical response in past, present and future military conflicts and analogous civilian emergencies.

This project should enhance the development or strengthening of ties between the collaborating parties, and pave the way for future support of data collection efforts and research projects.

AIM TWO: DEPLOYABLE DATA COLLECTION TEAMS

The success or failure of a military operation depends, among other things, upon the ability to deploy and maintain sufficient combat force as well as to maintain morale and public support. An understanding of the causes and circumstances resulting in the loss of deployed military personnel can lead to strategies of prevention and mitigation. Quality medical care has become a characteristic of western military operations, which contributes to high morale and public tolerance of the hazards of deployment. In addition to the humanitarian care of the severely wounded, proper medical support may slow the attrition of the force through lessening of injuries and disease.

Accurate prediction of the losses and disability resulting from a particular set of operations is invaluable for planning of both the tactics and the medical support requirements. Such forecasts are only possible if past experiences have been preserved in sufficient detail. Knowledge of the types and circumstance of casualties also allows the validation of efforts to improve care or decrease losses. The greatest limitation to prediction and validation is a lack of information concerning casualties relative to defined tactical situations and environments.

Military services throughout history have made great efforts at retrospective reviews of patients in various operations. Unfortunately, such retrospective analysis must emphasize patients admitted to medical facilities and includes only data routinely recorded in the medical logs and records. Personnel who return to duty after less intense treatment, and perhaps with some limitation, are not captured in these studies. These personnel could have the most important medical impact on the overall operation. This workload and its medical support requirements may not be identified in the development of the medical support package. Prospective studies have the ability to capture this perishable data and may give insight into the cause of manpower losses or decreased capability and thereby suggest strategies for reduction.

Large scale casualty events result from many difference causes and occur in various environments. Data and conclusions from one scenario may be an excellent model for the preparation and prediction of rarely encountered events, such as combat. For example, casualties and manpower disruption from a major earthquake are analogous to casualties anticipated for the bombing of urban areas or air bases. Similarly, an accidental major release of a toxic industrial chemical may reveal the impact of chemical warfare agents on support operations or unprepared combat troops. The contemporaneous collection of this perishable data has been limited by the difficulty in rapidly mobilizing a skilled data collection team.

Data collection must be an effort separate from medical care. All efforts to collect casualty data through the use of the medical support system have failed in significant ways. Personnel involved in medical care during a multi-casualty event are stressed to meet the needs of their patients even in the best of circumstances. Information not of immediate direct patient care value is not recorded, except anecdotally.

Casualty data sets should be compatible with previous databases. In order to assess the impact of changes in medical care, tactics, and weapons, the data collection effort must reflect the formats of previous efforts and existing casualty databases. The CCRC is the custodian for the major Vietnam study from the WDMET database, as well as casualty data from Operation Just Cause in Panama. Efforts are also underway to enable the re-entry of data from other conflicts and foreign databases into a common format.

The experience of the CCRC in responding to disasters and in preparing for data collection on casualties resulting from Desert Storm, resulted in two important lessons concerning such deployments. As a pilot project, the Center organized, coordinated and deployed a data collection team to the San Francisco area in response to the Loma Prieta earthquake. The result of the Team's delay in order to win the consent of national and local agencies prior to execution was of great significance in finally obtaining the enthusiastic support of the Centers for Disease Control, the California State Health Department, California National Guard and U.S. Park Police. Several agencies had specific areas of interest that were incorporated and addressed by the team. The concern of the civil authority about adding additional support demands to the existing requirements turned out to be among the most significant issues for military authorities involved in Desert Shield / Storm. The lessons learned from these experience are that (1) prior contacts and coordination are invaluable in gaining access and cooperation in a casualty situation and (2) data collection teams must be completely self-sufficient in order to gain acceptance and to avoid contributing to the disruptions.

As shown in the pilot project deployed to the Loma Prieta earthquake, a data collection team designated as a separate entity from local and regional health care and relief efforts allows collection of data that is otherwise very difficult, if not impossible, to obtain at a later date. By first-hand observation and timely personal interviews, combined with a thorough records review, comprehensive data may be assembled on injuries from the time of injury, through initial, on-site care, to definitive care at a fixed site. This allows collection of data not normally recorded by primary health care providers, such as exact cause, and description of injury, accurate time intervals from injury to initial contact and then to definitive care, initial triage decisions and

emergency first-aid provided, etc. These are all important aspects and are vital to the comprehensive analysis of a multi-casualty situation.

The compilation of the Vietnam casualty data has shown that such an effort, although possible, is much more difficult and time-consuming after the event is over. Much trust is placed upon the accurate remembrance of past events by those personally involved and this introduces a degree of uncertainty as to the reliability of the results. By maintaining a data collection team in a constant state of deployability, much of this uncertainty could potentially be eliminated and produce data of much greater value in accurately planning for future events, validating current standard operating procedures and policies and use in on-going research projects. Such a self-sufficient prospective data collection effort, however, would require extensive planning and significant resources. A comprehensive plan including anticipated resource requirements is necessary prior to committing to the creation of a data collection capability.

AIM THREE: MILITARY ABBREVIATED INJURY SCALE

The Abbreviated Injury Scale (AIS) is the most widely used anatomical measure of injury severity and was originally developed for use by automotive engineers in rating and comparing injuries incurred in highway crashes. However, it has subsequently been used in a wide range of applications, including quality of care studies. Previous research has established that the AIS more accurately characterizes blunt trauma than penetrating injury. Furthermore, given the unique nature of wounds due to high velocity military weapons, it appears that there are substantial shortcomings of the AIS when applied to the battlefield population. However, the AIS is so widely used and understood in the trauma management community, it is advantageous to base a military-specific system on the same structure. Additionally, most of the casualty care data available today are derived from civilian registries and studies. A common methodology which is valid for rating the severity of both civilian and military penetrating trauma will facilitate the use of civilian data for combat casualty care planning.

This study will first identify those aspects of penetrating military trauma which are not adequately characterized by the AIS. Research will then focus on the relationship between the AIS, and the mortality associated with penetrating trauma in order to develop modifications which will increase AIS accuracy and validity when applied to penetrating military trauma.

The development of a valid severity index for trauma resulting from military weapons has many advantages. Chief among these is its role in combat casualty care research, including the retrospective evaluation of care. Since combat casualties occur relatively infrequently, the standard for acceptable care must be drawn, in part, from the civilian trauma experience. However, given the substantial differences between civilian trauma (particularly the highway crash injuries on which the AIS is based) and military wounding, the ability to control for injury severity across these two populations becomes essential.

The availability of an AIS which is valid for military wounding will aid the classification, integration, retrieval, and analysis of wound data. As a result, more appropriate evaluation of clinical care methods and procedures will be possible and more accurate planning may be

achieved. In this regard, the "Traumabase" study, developed under U.S. Medical Research and Development Command (MRDC) funding contains computerized clinical information on more that 8,000 Vietnam casualties which can be cost effectively utilized in the development and validation of a military injury severity scoring mechanism. Likewise, the proposed research will benefit all future casualty care research by providing a more appropriate injury severity classification system and methods for controlling case mix in combat casualty studies than that which is currently available.

Methods

AIM ONE: ASSESSMENT OF CASUALTY DATABASE AVAILABILITY

Potential sources of casualty data were identified and prioritized, using the following criteria:

1. Agencies of nations with involvement in multi-casualty events, both civilian and military
2. Comparability of host agency's or nation's medical care system to that of the U.S.
3. Nations or agencies with a known emphasis on data gathering or research.

A three-tiered priority list was used to expeditiously approach and identify productive sources of data. These were categorized according to anticipated data yield as shown in Table 1:

Table 1: Potential Countries where Casualty Data may be Obtained.

Expected High Yield	Potential High Yield	Unknown
U.S. Archives (civil and military Germany Great Britain France USSR / Russia Israel Japan Canada	Italy Spain Eastern Europe Central America	Other NATO Philippines Australia India Pakistan

Written and telephonic contacts were made to provide and initial indication of data resources and interest. Personal contact with database custodians and face-to-face consultation and briefing of appropriate authorities were necessary to achieve the cooperation of agencies in this effort.

Site visits were used to allow:

1. Direct observation of data to determine:
   a) Actual contents
   b) Data quality
   c) Data accessibility
2. Establishment of personal contacts to facilitate data access
3. Solicitation of possible collaboration on future analysis of data
4. Briefing foreign hosts on the project, highlighting the benefits of participation

Attempts were made to coordinate conferences of researchers, planners and present or former government officials as these are ideal for arriving at a consensus on mechanisms of data access and collaboration.

Adhering to U.S. Department of Defense (D.o.D.) and State Department guidelines for inter-agency and foreign contacts, and utilizing established relationships between CCRC / USUHS and host nations or agencies, the CCRC made:

1. Contact with agencies from each potential data source
2. Site visits where appropriate to productive contacts in the expected high yield category
3. Collateral visits in conjunction with primary site visits to sources where there was evidence that useful data may be available.

The CCRC therefore identified the type, amount and availability of pertinent casualty data collections under the control of the host nations / agencies by correspondence, direct observation and conferences with known authorities and referred points of contact in the military and civilian medical and emergency response communities. This approach allowed an accurate, first hand assessment of the feasibility of beginning the compilation of a casualty database resource.

AIM TWO: DEPLOYABLE DATA COLLECTION TEAMS

(A) Deployable Data Collection Team Plan Development:

The Casualty Care Research Center developed a plan to:

1. Standardize data set and collection formats designed to capture perishable data on casualties, disability, and injury control through a consensus process among all involved agencies
2. Utilize current state-of-the-art technology in portable computers and multimedia data management to optimize data collection, storage, and retrieval.
3. Create and refine operational plans for various deployment contingencies
4. Procure and maintain for immediate deployment the equipment and supplies necessary to execute the operational plans. The Data Collection Teams were designed and equipped to be completely self-sustaining where necessary.
5. Organize multi-disciplinary data collection teams to respond to appropriate multi-casualty events.
6. Deploy to casualty events to collect data. Events were selected based on the likelihood of successful data collection concerning conditions relevant to military operations and occurring in analogous environments.
7. Enter the data collected into a computerized databank to be available for long term detailed analysis and to respond to specific inquiries.
8. Conduct analyses to provide injury epidemiology, acute care and injury control information.
9. Modify and refine the data collection organization and process, utilizing the experience gained from deployments and data analysis.
10. Investigate emerging technologies which might maximize the yield from data collection, storage, retrieval and analysis activities.

(B) Development of Data Collection Instrument:

The most important feature of the data collection process was the attempt to develop a multi-disciplinary and multi-use data collection instrument. The data collection effort attempted to serve as an umbrella for all organizations and research interests deeded appropriate by the funding agency. The CCRC developed a trail data collection instrument. Modification of data fields to be collected was defined by a consensus methodology that was limited by practical considerations.

The goal of the trial database was to be able to address the following issues:

1. What is the profile of casualties for each defined situation and population including incidence, type and activity
2. What is the prevalence of protective equipment use in various situations? What is the effect, if any, of protective equipment on injury, including anatomic distribution of injury, severity, and outcome?
3. What is the incidence of injury while rendering aid to others? What aspects of field medical care are most associated with injury?
4. How much time passes between injury, aid, and arrival at a medical facility in various environments? What is the relationship between time to care and outcome?
5. What medical care is provided prior to a casualty's arrival at a medical facility and what is its effect on outcome?
6. Is there evidence of unrecognized dysfunction due to combat stress type phenomena?
7. What is the distribution of injury severity among casualties?
8. How well do injury severity coding schemes (such as the Abbreviated Injury Scale) apply to injuries of varying etiologies, e.g. civilian penetrating wounds and military penetrating wounds?
9. What physiological, psychological and anatomic casualty characteristics reliably predict outcomes?

The data collection instrument was initially prepared in hard copy. Development of a notebook computer based checklist was attempted. This technology would constitute a major advance in the efficiency and productivity of data gathering and entry into databases.

AIM THREE: MILITARY ABBREVIATED INJURY SCALE

There were three specific phases to this investigation.

The first phase attempted to identify likely areas where the Abbreviated Injury Scale (AIS) inadequately characterizes military wounding. Drawing data from the 8,000 casualties contained in the Department of Defense "Wound Data Munitions Effectiveness Team (WDMET) study", military injuries which can not be coded in the AIS were to be identified. Also, injuries which could not be coded, but were assigned inadequate severity codes according to the existing scheme were to be flagged for further study.

These topical areas of AIS deficiency were then used to facilitate consensus modifications of the AIS by a group of experts using a recognized decision-making methodology (Delphi technique). Experts were selected on the basis of both their knowledge of civilian and military trauma care, and their familiarity with the science of injury severity scoring.

The third phase consisted of validating the proposed changes using actual data available from the WDMET study. Attempts were made to locate data that related to more recent cases drawn from both military and civilian experiences that were sufficient to support the effort and for additional validation studies.

Results

AIM ONE: ASSESSMENT OF CASUALTY DATABASE AVAILABILITY

Investigations of the existence, characteristics, and potential availability of casualty databases were conducted from a variety of sources listed in Table 1 (see Methods: Aim 1). Of these, the most productive leads were gained from contacts made in Russia, Germany, Israel, the United Kingdom, and France. Details of the progress made through contacts and organizations from these countries are given below.

Russia

A site visit was made to the Kirov Military Medical Academy, of the Kirov Institute, St Petersburg, Russia, during April 1992 (see Annex A and Annex B).

The Kirov Institute has been a center of military medical science for almost 300 years. It is analogous to the Uniformed Services University of the Health Sciences (USUHS) as a medical school for uniformed physicians with broad research interests in general medical topics as well as the preservation and development of experience and knowledge particularly applicable to the military or disaster environment. Internationally published works from the Kirov Institute are well respected and can be found as references in U.S. texts, including current volumes of the TEXTBOOK OF MILITARY MEDICINE. The Institute consists of 54 extremely selective academic departments involved in extensive research, the clinical care of the very large local military population as well as civilian trauma, and the teaching of over 300 medical students. Within the former Soviet Union, the Kirov served as both a medical research and development center and was among the most prestigious of medical schools. The Kirov Institute occupies a prominent role in the national socialized medical system and represents a "national resource" for Russia in non-military medical care and science.

The specific aims of this site visit were to:

1. Discuss mechanisms for obtaining access to casualty databases
2. Examine representative data files
3. Consider the feasibility of joint research efforts
4. Develop proposals for establishing other academic and research programs between USUHS and the Kirov Institute. Of specific interest was the potential for contributions from the Kirov faculty and Soviet experience to the TEXTBOOK OF MILITARY MEDICINE.

The visit also included an out-briefing in Moscow with LTGEN. Eduard Nechaev, Chief Surgeon, Ministry of Defense.

During the visit, the aims were achieved and opportunities were presented that went far beyond the original objectives. In addition agreement was reached on identifying areas for future research that would be of likely mutual interest and benefit to both the U.S. and Russia (see Annex C). The subject areas identified were:

1. Evaluation of the pathological processes resulting from high velocity gunshot wounds
2. Research into techniques to preserve the viability of tissues after wounding
3. Characterization of wounds from various weapons
4. Medical toxicology of chemical agents
5. Ergonomics of military vehicles and tasks
6. Protection from various types of radiation
7. Treatment modalities for crush injury
8. Early external fixation of major fractures as prevention of systemic traumatic manifestations
9. Protective equipment for mine injury

At the concluding briefing with General Samoylev (Deputy Commander), Colonel Mark Dyakonov was designated as the point of contact to coordinate the development of specific research proposals. The Director of the Kirov Institute proposed a written agreement of appropriate authorities of each country for the development of specific proposals.

U.S. State Department personnel in St. Petersburg expressed great interest in the development of a successful program. The U.S. Consul General personally assisted in furthering the relationship between USUHS and the Kirov Institute in anticipation of positive impact on the diplomatic environment. A collaborative program would demonstrate respect for Russian scientific achievement in a system otherwise under great criticism. Productive use of the scientific establishment will preserve this resource for development within the Russian Federation for the future.

Significant issues that were noted during the visit were:

1. Soviet forces in Afghanistan sustained approximately 15,000 killed in action and 50,000 wounded. Complete medical records are stored in a central archive now maintained by the Russian Federation. A sample of 4,000 records was evaluated for various specific statistical parameters (see Annex D). One of the most significant results found was that the distinguishing difference between combat trauma and civilian trauma is that multiple injury trauma is much more prevalent during combat than in the civilian environment. Of the 4000 combat records analyzed, 25% of all casualties sustained multiple injuries and 10% of all wounds required specialized care at all echelons. Studies of the records held in the archive have been limited due to the labor intensive nature of manual analysis.

2. The limitations of the civilian trauma derived injury severity scoring systems have been noted at both the Kirov Institute and at USUHS. Parallel efforts have been made to define a scoring system which predicts return to duty, disability, resources required, and outcome. The Field Surgery Department at the Kirov Institute has attempted to derive a scoring system comparable to the U.S. Abbreviated Injury Score and Injury Severity Scoring System.

3. Further contacts between USUHS and the Kirov Institute were encouraged by the leaders and faculty and by the Chief Surgeon of the Ministry of Defense in Moscow. Also of significance was the enthusiasm for such contact by the local U.S. State Department personnel including the personal support and assistance of the U.S. Counsel General. Short or longer term exchanges of faculty or students were considered the best vehicle to develop this relationship and future collaboration. Discussions of the mechanisms of potential exchanges revealed options which would enable the cost effective implementation of such programs.

4. The leadership of the Kirov Institute was receptive to collaboration on future sections of the TEXTBOOK OF MILITARY MEDICINE. Departmental faculty were enthusiastic about contributing, based on their current research and extensive experience in Afghanistan, particularly in the management of mine injuries and delayed care due to evacuation difficulties.

Subsequent to the visit to the Kirov Institute, a series of recommendations were drafted for the Assistant Secretary of Defense for Health Affairs (ASD(HA)) for the continuation of collaboration between the Kirov Institute and investigators of the Casualty Data Access Research Project. These were:

1. The Casualty Care Research Center (CCRC) of USUHS should develop and submit a proposal to the U.S. Army Medical Research and Development Command to create an Afghanistan Casualty Database (see Annex E). After appropriate review and the approval of further contacts with the Kirov Institute, the counterpart principle investigators would develop a joint protocol. The leaders of the Kirov Institute and relevant departments expressed "awe and envy" at the prospect of computerized databases. Access to archived records would have to be obtained from central authorities but the senior leadership did not anticipate significant difficulties in gaining access to records for study. Excerpts of records appeared to contain sufficient data for an excellent database, however, actual records were not available for examination. If these records are sufficiently complete, pursing this database in part or even in its entirety could be accomplished at reasonable cost by use of Russian translators and data entry personnel. The next step in this effort would require a visit to USUHS by key investigators to demonstrate the casualty database capability developed at the CCRC and to work out the process necessary to establish analogous data sets using their records.

2. The CCRC of USUHS should develop and submit to the service research authorities a proposal to evaluate the Kirov Institute's proposed military trauma scoring system. Such an assessment would include collaborative validation through application to other casualty databases.

In addition, the following recommendations were made to ASDHA, for collaboration with the Kirov Institute investigators for militarily relevant research. These were:

1. Demonstration Basic Research Project.
   In order to evaluate the feasibility of pursuing any of the additional opportunities for collaboration, a well defined yet significant collaborative demonstration project will be proposed. Of particular interest to the medical community would be to take advantage of the expertise within the Kirov Institute to define the terminal ballistics of modern weapons in tissue preparations as compared with gelatin blocks. Principle Investigators from both countries would need to meet to formulate specific scientific goals and develop a joint research protocol.

2. Faculty / Student Exchanges
   A reciprocal visit to USUHS by Kirov Institute faculty, led by General Nechaev, Chief Surgeon to the Defense Ministry, would be an appropriate and very constructive step in any further relations. A future follow-up site visit by corresponding DoD leaders should be anticipated as part of any program of exchanges.

3. Collaboration on Specific chapters of the TEXTBOOK OF MILITARY MEDICINE

Subsequent to the drafting of the above recommendations that arose from the visit to the Kirov Institute the following issues were pursued:

1. Approval was sought to develop a "Protocol of Interventions" to develop proposals of mutual benefit.

2. An invitation was extended to LTGEN Nechaev to lead a Kirov Delegation to USUHS / DoD. Primary topics of discussion were to be to develop research plans among the primary faculty. In addition contributions to the TEXTBOOK OF MILITARY MEDICINE and mechanisms and focus of any further exchanges could be discussed.

3. Approval was sought to proceed with specific collaborations of Kirov faculty to the Casualty Data Access Project, contributions to the TEXTBOOK OF MILITARY MEDICINE, and a demonstration joint research project.

As a result of these efforts, the following approvals, visits and protocols were agreed upon.

1. A protocol for a reciprocal education program for military medical personnel between the Department of Defense of the United States of America and the Ministry of the Russian Federation was agreed upon and drafted (see Annex F).

2. A list of potential areas of research to pursue was drawn up (see Annex G). Subjects of particular interest were identified as:

   a) Computerized casualty data access and injury prediction models
   b) The unique aspects of casualty care
   c) Treatment alternatives in disaster / mass casualty situations

d) Medical education

3. Subsequent to the draft protocol being drawn up, an agreement was written and during April 1993, ASD(HA) gave approval to the draft agreement and appointed the President of the USUHS as Executive Agent for DOD (see Annex H).

4. During June 1993, Dr. Joseph (ASDHA) invited LTG Chizh to visit Washington to finalize the agreement between USUHS and the Kirov Institute (see Annex I).

5. During October 1994, a delegation headed by Lieutenant General Ivan Chizh and General Schenchenko visited Washington D.C. to meet with representatives of the USUHS, including Dr J. Zimble, President of the USUHS and Dr Joseph, Assistant Secretary of Defense Health Affairs (ASDHA: see Annex J). During this time frame USUHS investigators demonstrated the casualty database capability developed at the CCRC.

6. During June 1997, General Schevchenko, Commander, Russian Military Academy, St Petersberg was invited by Dr. Val G. Hemming, Dean, USUHS, to send two medical students from the Russian Military Medical Academy to USUHS (see). As a result of this invitation, two medical students, (Sergei V. Iskrovshy and Nickolas N. Ruhliada: see Annex L) spent two months based at the USUHS.

The contacts made between the USUHS and the Kirov Institute as a result of the Casualty Data Access Program are still maintained.

Israel

Initial contact was made with the Israeli Defense Forces (IDF) Surgeon General, describing the project and requesting IDF participation. Subsequent contact indicated the Surgeon General's full support. Further interactions were directed to the IDF Chief of Trauma

The existence of data sets covering a subset of casualties was established for each of the IDF conflicts since 1973. However, Israeli officers indicated that the depth of individual records was limited, particularly in regard to specific wounding mechanisms and that selection bias may exist.

Initially access to data sets was not pursued due to unrelated diplomatic and political tensions between the United States and Israel, however, the IDF contacts encouraged continuation of the project at a future date.

Extensive efforts were made on behalf of a U.S. Army Medical Corps officer with trauma experience who was seeking to establish a permanent liaison position with responsibilities to facilitate a trauma care and casualty research activities. The result of this effort was that an agreement was reached that the bilingual officer who is now in reserve status would be available to assist in evaluation of data sets and any further efforts in country if the opportunity arises with the time-frame of this project.

Subsequent to initial contacts, during which the CCRC and representatives of the Israeli Military Medical Command discussed the development of a joint approach to casualty data collection, the CCRC was approached in April 1996 by LTC Ami Cohen, the CCRC was asked to collaborate on the development of "An Israeli National Casualty Data Base". A proposal was developed by the CCRC (see Annex M), but due to various political and funding constraints, the CCRC has not yet been able to collaborate further with the Israelis on this project.

Federal Republic of Germany

Contact was made with the Emergency Medicine and Trauma Surgery Departments of the Bundeswehrzentralkrankenhaus, Koblenz, one of the two Bundeswehr medical centers of the Federal Republic of Germany (FDR). The previously warm relationship between the medical center and the Uniformed Services University of the Health Sciences (USUHS) was continued, however, the subject of the military medical system of the former German Democratic Republic (GDR) was treated as inconsequential.

The Center staff was very interested in the database project and offered any assistance. They noted that the additional aims of the Database Access Project were also areas of potential mutual benefit. At the time of the site visit, a proposal was under consideration to fund a center for the study of injury and medical response to multiple casualty events at the Bundewehr Medical University in Munich. This proposal was under review at the Surgeon General's office. Direct contact with the Surgeon General's office was encouraged to explore the possibility of complementing the efforts of this project with those the Germans to maximize their productivity.

Existence of a database or casualty records of sufficient depth and background was not known to any of the member of the Medical Center or research departments. The German military medical system, similar to that of the U.S., is sufficiently decentralized in both research and clinical centers that the faculty could not be sure that such records did not exist in other Centers, Universities or archives. A list of these facilities was to be prepared for future contact. The faculty was unable to give reference to or the whereabouts of any members of the former GDR Military Medical School in Leipzig.

One specific goal of the site visit to Koblenz was to be able to inspect some representative samples of the large quantities of medical texts and documentation from the GDR which were being examined by relevant departments of the medical center. These texts, although alluding to casualty data and publishing statistical analysis, make no reference to specific archives or databases that could be found during the preliminary inspection. Access to any FRG data identified was indicated as possible with the formulation of a joint agreement.

The contacts insisted with uncharacteristic stubbornness that NO GDR DATA OF ANY VALIDITY was to be found. Access to the material being examined was denied and no assistance was possible at this time in locating and interviewing past faculty of the Leipzig military medical facility. (This issue of the GDR military establishment and its absorption into the Bundeswehr appeared to be of exceptional political sensitivity. Issues of scientific ethics, financial impropriety and personnel security were of great impact due to the implications of these suspicions of individuals and organization now part of the United Germany).

United Kingdom

Contacts with current and former medical representatives of the British Military have indicated that there are potential sources of data that may prove to be useful resources.

One such source could be from those injured or killed during the Falkland Islands Campaign. During the campaign there were 147 fatalities and over 400 major casualties. There are post mortem data available from 50 of the fatalities that occurred during the land battle but there is no centralized database of medical information that contains details of the injuries sustained by all personnel. Much of this information would be contained in Regimental Journals or may need to be gathered from individual medical records. This information needs to be collated and a database established.

Another potential source is the Payne Archive. Dr. Leslie Payne is a British archivist who has put together a unique collection of military medical research and other material over many years. He is very keen for this material to be collated into a form that would make it readily available to the wider scientific community.

Bosnia Herzogovenia

During the siege of the city of Sarajevo there were over 4,000 deaths and over 10,000 civilian casualties within a few miles of a First World level of care surgical service. The victims were all injured by relatively modern military weapons. This set of casualties could be divided into three subsets. The first would be those casualties injured early in the conflict and where casualty evacuation was often delayed for an average of four to six hours. As the siege progressed the casualty evacuation system developed rapidly so that by the end of the first year the majority of the second set of casualties reached the hospital within five to 10 minutes. A third subset comprised military casualties who were wounded on the front lines around the city and who initially underwent emergency surgery by the Field Surgical Teams prior to evacuation and definitive care in hospitals within the city. This latter subset is analogous to standard military care practice.

The same surgical teams were ultimately responsible for treating the casualties of all three subsets and they believe, at least subjectively, that those casualties for whom evacuation times were longest fared much worse that those that had short evacuation times and early surgical intervention. However, there is no hard data to support this supposition although it is possible that sufficient data could be gathered to determine if it could be factually correct.

France

Contact with the Dean and Faculty of the Military Medical School in Lyon (one of three in France), was accomplished with the approval of the French Surgeon General. The existence of specific databases was unknown to the officials contacted. The existence of casualty research efforts was well known within the military medical system. Casualty databases of archives were to be conducted but no results were forthcoming during the course of this program.

AIM TWO: DEPLOYABLE DATA COLLECTION TEAMS

A) Deployable Data Collection Team Plan Development:

A plan necessary for the implementation of a data collection process to collect medical attrition data was developed for use in an operational environment. The plan was developed to be used in conjunction with a data collection instrument that was produced as a direct result of this program (see below: Aim 2, Part B: Development of Data Collection Instrument).

The plan was developed after consultation with a number of agencies and personnel and became known as the Force Surveillance Project and was designed to be used within the operational environment of Operation Joint Endeavor in Bosnia (see Annex N).

The plan developed made provision for the use of civilian data collectors who would not interfere with the operational activities of medical providers but who would remain under the control of local military commanders. The data collectors would be based at Forward and Brigade Operating Bases, Task Force Headquarters and Support Base Headquarters so that medical attrition at all echelons of care could be tracked. Information collected would be transferred back to central databases held in Germany and the U.S. Information would be collected by the data collectors from standard operating reports, specific surveys, accident reports, daily sick call registers and medical surveillance reports. The technology to be used for the data collection process was at the time standard off-the-shelf laptop computers. Provisions were made to ensure that legal, ethical and data security issues that are involved in the recording of medical information were covered in the plan.

Funding to support the data collection efforts of the Force Surveillance Project within Operation Joint Endeavor was obtained during 1996 but was subsequently withdrawn before the project began. The issues identified in the plan that was developed for the Force Surveillance Project could be applied to other missions where there is a requirement for a data collection process to be implemented.

B) Development of Data Collection Instrument:

Significant progress was made towards the development of a data collection instrument. It was established relatively early on during the project that no single resource was available that could provide all the information necessary to develop a data collection instrument. Consequently, during the course of the project, numerous medical resources were consulted to establish lists of information that would be required for inclusion in such a data collection instrument. These consultations resulted in the production of a comprehensive list of data fields that were collated and eventually established as data fields for a data collection instrument (database) that came to be known as the Force Surveillance Project Database (see Annex O).

The fields within the database were subdivided into related areas that were grouped within the following subcategories.

1. Demographic Data
2. Sick Call Register
3. Medical Attrition at Primary Care Level
4. Medical Attrition at Tertiary Care Level
5. Administrative Attrition
6. Unit Administrative Data
7. Telemedicine

The aim in developing the database was to produce a multimedia database of personnel losses and contributing factors on a unit or event basis. The concept was based on unit-level descriptive epidemiology, to include all sources of attrition (which was defined as an inability to fully perform one's military job for 24 hours or more), with valid denominators and appropriate tactical operational and environmental information.

Subsequent to the production of the Force Surveillance Project database an implementation plan was developed for the database to be used to collect force attrition data within the operational environment of Operation Joint Endeavor in Bosnia (see Annex N). Funding to support the data collection efforts of the Force Surveillance Project within Operation Joint Endeavor was obtained during 1996 but was subsequently withdrawn before the project began. To date, there has been no further progress in using the data fields developed in an operational environment.

AIM THREE: MILITARY ABBREVIATED INJURY SCALE

The objective of this section was to develop modifications of the Abbreviated Injury Scale (AIS) so that it more adequately characterizes penetrating military trauma. Data were drawn in part from the Wound Data and Munitions Effectiveness Team (WDMET) study conducted on casualty records arising from Vietnam during 1968 and 1969. All WDMET cases had previously assigned been assigned a series of Penetrating and Blunt Injury Codes (PEBL), which are purely descriptive and do not indicate injury severity.

The AIS may fail to adequately characterize penetrating, military trauma in two ways. First, there may be injuries which occur on the battlefield, but for which there are no appropriate descriptions in the AIS dictionary. Second, there may be wounds which are described in the AIS dictionary but which should be assigned a different severity if caused by a high velocity bullet, rather than by blunt trauma.

The PEBL descriptions for all codes which characterize injuries occurring in the WDMET population were scored according to the 1985 America Association for automotive Medicine. The 1985 revision was used because a computerized reference table had been previously been developed to facilitate the conversion of large numbers of PEBL codes to AIS-85 scores. These were subsequently updated to the AIS-90 revision.

The PEBL/AIS mapping was used to identify categories of penetrating injury that were not appropriately described by the AIS. Under this computerized translation, those codes which contained insufficient information to determine an AIS, or for which there was no equivalent AIS descriptor, or which corresponded to a possible range of AIS values were coded as "0", and flagged for review.

All 32,000 PEBL descriptions were mapped to AIS scores and those assigned an AIS of "0" were reviewed. Disagreements between the coder constructing the conversion table and the reviewer were resolved through discussion and consultation with a third individual experienced and practiced in the application of the AIS.

There were 830 PEBL codes that did not correlate well with AIS classifications. The coding error type associated with each PEBL code was identified:

1. Improper or invalid PEBL code assigned to the injury
2. No equivalent AIS was available
3. PEBL provided inadequate information for AIS coding
4. Appropriate AIS severity was available.

Possibly valid AIS codes were provided in cases where the invalid PEBL code made no difference in the AIS assignment, or where the Principal Investigator thought a valid AIS assignment was possible.

The overall error rate among the 32,000 PEBL codes was 2.6% for all error types. There were surprisingly few type two errors (154 or 0.5%), that is, injury descriptions for which there

were no equivalent AIS equivalents. The distribution of error types among the 830 injuries which could not be coded in AIS was as in Table 2:

Table 2: Distribution of Penetrating Trauma and Blunt Trauma (PEBL) Code Errors

	Error Type	Percentage of All Errors
Incorrect PEBL Code	1	53
No Equivalent AIS	2	18
Inadequate Information for AIS Coding	3	13
AIS Code Available	4	15

The PEBL code descriptions which could not be coded in AIS were identified and organized by frequency of occurrence. The frequency distribution ranged from 53 occurrences for open injury of the diaphragm, to single occurrences for more obscure and minor injuries like "laceration or perforation without severance of the extraocular muscles" and "open partial laceration of the musculocutaneous nerve". Major injuries unique to military wounding, which might be expected to have a significant effect on mortality, such as explosives and shredding cardiac injuries were infrequently represented. Thoracic wall injuries which do not penetrate into the chest, massive destruction of the skin, subcutaneous tissue and muscle of the buttocks, and diffuse lung injury (blast injury) occurred frequently. These issues were identified as important areas that clearly need to be addressed by an expert panel.

Thus AIS deficiencies of the first type were identified: battle injuries occurring in Vietnam for which there is no appropriate description. The characterizations of these injuries, as they appear in the WDMET files were incorporated into the appropriate anatomical sections of the AIS dictionary. An expert panel should be asked to modify the descriptions and assign a severity score for each new injury.

As a result of the preliminary trip to St. Petersburg, Russia (that was conducted in fulfillment of AIM ONE of this CDARP project: - Assessment of Casualty Database Availability), it was discovered that the Russians have also been acutely aware of the short-comings of injury severity scoring mechanisms, like the AIS, when applied to military penetrating trauma. They have developed their own 15-point scaling system that permits half-point increments. This system has been tested and validated on casualty populations and has been compared to the AIS. The existence of this previously unknown injury severity scoring system has opened up many exciting possibilities. These include comparison of the military AIS currently under development with the Russian system, coordination, incorporation and adaptation of scoring methodologies and validation of the military AIS currently under development on a previously unavailable casualty population.

Conclusions

The Casualty Data Access Projects (CDARP) were originally designed to discover relevant casualty databases from around the world and by collation and comparison within a common framework to draw conclusions of importance to the planning of multi-casualty trauma resulting from military conflict or civilian disaster events.

A major conclusion of this project has been to establish that much of the previously heralded anecdotal information about casualty databases is non-existent or exists in a format that makes access and analyses extremely difficult. However, significant progress has been made during this project in identifying potential sources of casualty data that appear likely to be of use to the U.S. military medical personnel.

As a direct result of efforts made during the CDARP project a number of areas and potential studies have been identified as worth pursing that could have significant practical importance to the care of future U.S. casualties. The four most promising of these that should be considered for further study and investigation are summarized below.

COLLABORATIVE STUDIES WITH THE KIROV MILITARY MEDICAL ACADEMY

As a direct result of CDARP projects, high level interactions between the medical commands of the U.S. and Russian Military have been occurring over a number of years. Agreement has been reached with the Kirov Military Medical Academy in St. Petersburg, to develop joint research projects that will be of mutual benefit.

The Kirov Academy wish to develop a Russian / English military medical dictionary. Such a dictionary would be an important step in the continuing development of mutual trust and respect through scientific collaboration and would facilitate access to data held within the archives of the respective nations. This project is seen as a high priority by the Kirov and assistance in its production would further cement relationships between the Kirov and the Uniformed Services University of the Health Sciences (USUHS).

During a visit by U.S. military medical staff to the Kirov in May 1995, members of the Russian delegation referred to a study that they undertook on data from the Russian - Afghan war that showed that exposure of female military personnel to blast had a pronounced deleterious effect on fertility. It is widely known that stress, particularly the extreme levels encountered during combat, reduces fertility in women through action on the pituitary / ovarian axis. The comments made by the Russian delegate suggested that the effect of blast is superimposed on this background level and if so, is an effect that is previously unknown to the U.S. An additional consideration in this regard is that such an effect may well be a direct result of blast waves causing disruptive damage to the ovaries themselves. In theory, this would be a feasible explanation and would raise the likelihood of an increase in miscarriage and birth defect rates in women exposed to blast. This is a subject area that is one that should be explored further as it may have significant implications for female U.S. military personnel.

FALKLAND ISLANDS WAR DATA

The Falkland Islands Campaign by the British to retake the Falkland Islands was undertaken at the end of a long logistical chain. It was a conventional, relatively small military operation in which the medical services achieved remarkable success in that only two casualties from the land battle died after having reached a surgical facility. Detractors have said that the evacuation times involved in many cases was so long that all those who were going to die, including many potentially salvageable cases, did so in the battlefield. This argument has raised the important question of what proportion of those killed in action are potentially salvageable and what measures could be undertaken to reduce that figure?

It seems likely that a complete set of casualty data could be attainable from currently disparate sources and would constitute an important data set for military and disaster planners. A pilot study should be undertaken to establish the extent of records that could be collated and incorporated into the data set.

THE PAYNE ARCHIVE

Dr. Leslie Payne is a British archivist who has collected a unique collection of military medical research and other material over many years. He is very keen for this material to be collated into a form that would make it readily available to the wider scientific community. This archive should be indexed and transferred to an electronic format.

SARAJEVO DATA

During the siege of Sarajevo over 10,000 civilian casualties occurred within a few miles of a First World surgical service. This set of casualties could be divided into three subsets. Early in the conflict, casualty evacuation was often delayed for an average of four to six hours. As the siege progressed the casualty evacuation system developed rapidly so that by the end of the first year the majority of casualties reached the hospital within five to 10 minutes. A third subset comprised military casualties that were wounded on the front lines around the city and who initially underwent emergency surgery by the Field Surgical Teams prior to evacuation and definitive care in hospitals within the city of Sarajevo. This latter subset is analogous to standard military care practice.

Discussions with surgeons and anesthetists in Sarajevo uncovered much subjective evidence that there were significant differences between the responses of the subsets to treatment. These same medical personnel are confident that sufficient records were taken at the time to quantify those differences. Such a study could provide significant evidence regarding the timing of casualty evacuations and the factors operating forward of the surgical facility that could help to reduce mortality rates of injured personnel. A pilot study should be conducted to confirm the amount and detail of medical record data available.

A system for prospective collection of data must be based on an effort that remains separate from clinical care. All efforts in the past to collect casualty data through the use of the medical support system have failed in significant ways. Aim Two of this project was directed at addressing this issue by identifying the components necessary for the infrastructure for rapidly deployable data collection teams, that would be capable of capturing perishable information, according to a standardized methodology and format. Significant progress was made towards the development of a data collection instrument. It was established relatively early on during the project that no single resource was available that could provide all the information necessary to develop a data collection instrument. Consequently, numerous medical resources were consulted to establish lists of information that would be required for inclusion in such a data collection instrument. These consultations resulted in the production of a comprehensive list of data fields that were collated and eventually established as data fields for a data collection instrument (database). In conjunction with the development of the data collection instrument, detailed plans were developed for the implementation of the instrument in an operational environment.

Aim Three of this project addressed the need for compatibility between data sets collected from civilian events and those obtained from military events. Measuring the severity of injury is critically important for controlling case mix in study populations and making comparisons across populations. A common methodology which is valid for rating the severity of both military and civilian penetrating trauma would facilitate the use of civilian data for combat casualty care planning. Currently available methods were found to be inadequate for characterizing the unique nature of wounds due to high-velocity military weapons. This research effort looked at the potential for adaptation of the existing civilian scoring methodology to produce increased accuracy and validity when applied to penetrating military trauma.

Significant progress was made in developing a specialized injury scoring system. Areas where existing severity scoring methodology inadequately characterized military wounding were identified from and analysis of the "Wound Data and Munitions Effectiveness Team" (WDMET) study. These topical areas of severity scoring deficiency should be used to facilitate consensus modifications of the scoring methodology by a group of experts using the Delphi decision-making methodology. Experts should be selected on the basis of both their knowledge of civilian and military trauma care, and their familiarity with the science of injury severity scoring. Following the development of modifications to the scoring system, the proposed changes should be validated using actual data available from the WDMET study.

The potential benefits to the U.S. Military from undertaking all, or any one of the suggested projects that have been identified during this project could be considerable and greatly enhance the medical knowledge base for casualties arising from military conflicts or civilian disasters.

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Members of U.S. Delegation to the Kirov Institute, April 1992

ANNEX A:

Members of USUHS Delegation to Kirov Institute, April 1992

BG Russ Zajtchuk M.D.
Professor, Department of Surgery
Commander, Brook Army Medical Center

COL Joan Zajtchuk M.D.
Professor, Department of Surgery
Deputy Commander, Clinical Services
Walter Reed Army Medical Center

LTC Dean Calcagni M.D.
Clinical Assistant Professor, Department of Anesthesia
Director, Combat Casualty Research
Medical Research and Development Command

MAJ(P) John Hagmann M.D.
Assistant Professor,
Department of Military and Emergency Medicine
Casualty Care Research Center
Uniformed Services University of the Health Sciences

2LT Aaron Stack
MS II
Uniformed Services University of the Health Sciences

Annex B:

Chronology of Site Visit Coordination

ANNEX B:

Chronology of Site Visit Coordination

June '91 - Initial contact with Kirov Institute permitted by Soviet authorities for Col Joan Zajtchuk during Industrial College of the Armed Forces exchange visit.

Jan '92 - Informal contact by USUHS with Kirov Institute for follow-up site visit to evaluate potential for collaborative efforts

Feb '92 - Initial contact by USUHS with U.S. Consulate St. Petersburg

- Review and guidance by USUHS General Counsel of proposed site visit

Mar '92 - Briefing, President USUHS

- Request for assistance/approval from State Department

- Request for assistance/approval from Mr. Rodney Hoots OASDHA

- Discussed/submitted to Mr. Martin Schwartz, OUSD(P)

- Report of recommendation to Deputy Secretary of Defense for approval by Mr. Wolfowitz, Under Secretary of Defense for Policy

- Report of approval by Deputy Secretary of Defense Atwood

- Assistance by State Department, Russia Desk

Annex C:

Expanded Topic Areas for Potential Collaboration

ANNEX C:

Expanded Topic Areas for Potential Collaboration

After extended initial formalities, the Russian medical authorities at the Kirov Institute were exceptionally open and willing to substantively discuss all areas requested and were interested in expanding the topics of potential collaborative research. Extended visits and discussions were conducted with the four most relevant departments:

1) Traumatology and Orthopedics
2) Field Surgery
3) Applied Pathologic Anatomy
4) Military Medical Studies

A remarkable degree of concordance was found between the teachings of the Kirov Institute and USUHS with respect to the unique features of casualty management and the importance of disease and preventive medicine to military medicine and civilian disasters. Documented research was also presented concerning concepts of injury and treatment which are new or differ from current U.S. practice. At the concluding briefing with General Samoylev (Deputy Commander), the range of potential collaborative topic areas was dramatically expanded. These topic areas include subjects of the greatest interest to DOD medical research organizations.

From this extensive list of initial topic areas, proposals of interest to the medical research and development community can be formulated after involving subject area experts and determining U.S. co-researchers. USUHS previously maintained a satellite link with the former Soviet Union used for medical consultation during the Armenian earthquake and train disaster. A significant research effort involving the Kirov Institute may make reactivation of this link cost effective.

A) Evaluation of the pathologic processes resulting from high velocity gunshot wounds:
High velocity wounds would be characterized at all levels from the mechanical process of "molecular shock" (concept appears to equal the concept of a tissue shock wave), biochemical changes within cells such as the development of free radicals, plus the physiologic functioning of cells after wounding. Such evaluation of the biophysics, tissues, and cellular function to be conducted using state of the art techniques such as nuclear magnetic resonance imaging, infra-red and radiographic studies, micro-anatomic and

mechanical micro-sensor analysis, and determination of cellular biochemical status. The goal of such evaluation is to be able to define a zone of "secondary necrosis." This is the area of tissue beyond the mechanical wound track which requires debridement. Such analysis should enable the exact demarcation of viability and decrease to often extensive amount of tissue lost to wide debridement.

B) Research into techniques to preserve the viability of tissues after wounding:
Researchers at the Kirov Institute have evidence that the pathologic processes begun at the time of wounding continue until resuscitation and debridement is complete. This results in an increased loss of viability if treatment is delayed. (Of note may the possible explanation of Dr. Fackler's controversial experiences showing adequacy of limited debridement since it was performed promptly after wounding.) If the process of the loss of tissue viability is understood, then field interventions may be possible to limit the extension of necrosis when prompt surgical treatment is not available due the tactical situation or a disaster.

C) Characterization of wounds from various weapons:
This effort would consist of extending the description of terminal ballistics from gelatin blocks to actual tissues. Weapons of interest could include the common military, terrorist, and counter-terrorist rifles to various fragmentation devices. New techniques are now available for the plastisation of tissues and mirco-anatomic analysis.

D) Medical toxicology of chemical agents:
The current destruction of huge stockpiles of chemical agents and the industrial complexes previously involved in their production has led to an increased risk of exposures. The potential for altered toxins is of great concern due to the undefined reactions during ageing of munitions, the destruction process, and accumulated toxins at production facilities.

E) Ergonomics of military vehicles and tasks:
Collaboration was proposed on efforts to define optimal work environments and vehicle configurations including the concept of "engineering psychology."

F) Protection from various types of radiation:
Collaborative research efforts in protection and treatment of radiation exposure including non-ionizing radiation such as lasers and high frequency electromagnetic spectrum waves. (For certain types of high frequency waves Russian safety standards are exceptionally more stringent than U.S.)

G) Treatment modalities for crush injury:
Research is necessary to define limb saving techniques which also protect from systemic complications and organ failure as demonstrated from recent earthquake experiences. The Department of Orthopedics at the Kirov Institute has developed a technique of isolated perfusion of the crushed extremity to designed to prevent the demonstrated systemic microvascular damage found in their crush syndrome patients.

H) Early external fixation of major fractures as prevention of systemic traumatic manifestations:
Recent clinical experience from the Field Surgery Department at the Kirov Institute suggests that major fractures contribute to systemic morbidity and mortality. This is felt to be the result of hemorrhage, tissue destruction, and embolization from movements of fractures during resuscitation and transport to definitive care. The use of field external fixation kits at early echelons of care may decrease traumatic disease although not intended to provide definitive fracture management.

I) Protective Equipment for mine injury:
Through the analysis of wound data from mine injuries, the faculty at the Kirov Institute have developed equipment and uniform modifications to decrease the severity of mine injury. After appropriate testing, such equipment may be of value at least in operations with high mine exposure risks such as recently encountered in Kuwait.

Annex D:

Examples of Statistical Analysis of Casualty Records

ANNEX D:

EXAMPLE OF STATISTICAL ANALYSIS OF CASUALTY RECORDS

KIROV INSTITUTE

16 APRIL 1992

Patients with multiple injuries are noted to be a distinguishing difference between combat trauma and civilian trauma. Statistical analysis was perfomed on a sample of 4000 casualties from Afghanistan.

25 % of all casualties sustained multiple injury

10% of all wounds required specialized care at all echelons

Casualties with Multiple Wounds

	% of casualties with multiple w.	hospital stay	mortality
Multiple soft tissue wounds only	38.8%	9.4 days	0
soft tissue wounds + 1 serious wound*	30.6%	112 days	4.2%
multiple serious wounds*	30.6%	117 days	32.4%

* serious wounds = major bone fracture or wound of head, chest, abdomen, or spine

Location of Wounds

(Casualties surviving to reach medical care)

Extremities	74.4 %
Abdomen	58.1 %
Chest	32.4 %
Head	29.4 %
Spine	5.9 %
Neck	1.3 %

Location of Serious Wounds

(Casualties surviving to reach medical care)

Abdomen	28 %
Extremities	22 %
Head	10 %
Chest	6 %
Pelvis	2 %
Multiple	32 %

Combinations of Serious Wounds

Chest + Abdomen	29.4 %
Skull + Extremities	23.5 %
Pelvis + Extremities	12.4 %
Abdomen + Extremities	8.5 %
Chest + Extremities	5.2 %

Annex E:

Proposal to create an Afghanistan Casualty Database

A Proposal to Establish a Collaborative Program in the Study of Mine Injuries between The Uniformed Services University of the Health Sciences, Bethesda, Maryland and the Kirov Military Medical Academy, St Petersburg, Russia.

Introduction

In recent years, a relationship has been fostered between the Uniformed Services University of the Health Sciences (USUHS) and the Kirov Military Medical Academy (The Kirov)in order enable a transfer of experiences and ***** and thereby reduce death and suffering on the battlefield. This relationship has now developed to the point where a Memorandum of Understanding was signed between the two Institutions in February this year. The first fruits of that agreement are starting to be borne with an agreement in principle to transfer casualty data between the two Institutions and to jointly work towards a better understanding of the management of mine injuries. This proposal describes the basis on which to proceed over the next 18 months to include a transfer of data, joint studies on it's implications leading towards a major joint international symposium on mine injuries towards the end of 1997.

Mine Injuries

Over recent years, the overall international emphasis has changed from a pre-occupation with planning for major conflict in Europe to the amelioration of the effects of local conflicts around the world. Mine injuries have never been the major concern for military physicians in the past and consequently have not been the focus of major research programs which have tended to concentrate on missile injuries and general supportive management of these casualties. Nowadays, the victims of military trauma result from local conflict, are increasingly civilian and very often children. Due to the liberal use of anti-personnel mines during these conflicts they claim their victims months or years after they are laid or even after the cessation of hostilities. There effectiveness as targeted weapons of war rather than random weapons of terror has been questioned by soldiers and doctors alike. This has led to concerted calls for the banning of these weapons by a growing number of Governments and International bodies, most notably the International Committee of the Red Cross (ICRC). Despite the success of these international initiatives, the problem of mine injuries is likely to remain the greatest challenge for the war surgeon for the foreseeable future. It is estimated that **,000 people are killed or injured by mines every year around the World including US military personnel. There is a wide range of management doctrines currently being employed suggesting that none is perfect and it is certainly true to say that there are many unanswered questions remaining. The Russian military Medical service has the greatest experience in the management of mine injuries of any in the World dating from the Afghan War through to current ongoing experience in Chetchnya. The Surgical Division of the ICRC similarly has a wealth of experience from a number of conflicts around the World. Their management strategies are fundamentally different from each other and from that of the US military. Given this latest agreement by the Kirov to exchange data with USUHS and a longer standing willingness on the part of the ICRC to allow access of their data, we are now in a position to work towards both a consensus on management and a consensus on the data fields necessary from future casualties to enable further study of unresolved questions.

Goals and Objectives

Exchange of data

The Russian military medical service has treated many thousands of mine injuries over the last 25 years. 4,000 hospital records of Russian military mine casualties are held by the Kirov Military Medical Academy, we have not been allowed any access to these records to date. These records have formed the basis of a number of medical studies by the Russians. They are hand written in Russian Cyrillic script and are apparently complete. They include casualties amongst both foot soldiers and occupants of Armored Fighting Vehicles. Other than that, the degree operational detail is uncertain. The Russian military doctrine for the management of these injuries is to pay little attention to the wounds themselves but to concentrate on the management of the respiratory and cardiovascular consequences of the injuries. This management strategy is at complete variance with "Western" doctrine, both military and civilian but is claimed to be more effective.

A second claim made by the Kirov is that the data shows a marked effect of blast on the fertility of female victims of blast over and above the background level found amongst controls. It is not unreasonable to hypothesize that such an effect is secondary to direct ovarian trauma rather than an action on the pituitary-ovarian axis with a consequent increased risk of miscarriage and fetal abnormality rates. The implications for the US Forces as it increases the role of women in the forward areas is obvious and must be investigated further.

The WDMET data held by USUHS is only the major prospective medical study ever undertaken into the effects of weapons and the outcome of their victims. Undertaken during the Vietnam War, the study follows in detail the course of 8,000 consecutive casualties concentrating particularly and uniquely on the operational circumstances surrounding the injury. It is at the core of much of modern thinking on the management of casualties and there is no comparable database available in Russia. The data is held on paper and electronically by the Casualty Care Research Center (CCRC) at USUHS and is readily transferable.

Goals and Objectives

Implementation

This project is unusual in that we are uncertain of the quality of the raw material to be studied. It would be politically insensitive to ask to verify it's quality and relevance and the Russians have not offered this as an option. The project will therefore be implemented in three phases with a period of re-evaluation between each. The phases will be:

i/ Data exchange and Data Evaluation

ii/ Analysis of data and joint publication of position papers on the management of mine injuries.

iii/ An International Conference on the Management of Mine Injuries, provisionally time tabled for October 1997 to identify areas of consensus and to identify where further study is required.

Phase one - Data exchange and Scientific Evaluation

Goals and Objectives

The goals and objectives of option 1 are:

i/ To transfer copies of the Afghanistan database on mine injuries held by the Kirov Military Medical Academy in St. Petersburg, Russia to the Uniformed Services University of the Health Sciences in Bethesda, Maryland and in return to transfer an electronic copy of the WDMET database held at USUHS together with the necessary information technology support to enable it to be of value to the Kirov.

ii/ To further strengthen the link between the Kirov and USUHS thereby enhancing a sense of trust and mutual understanding between the Institutions themselves and the wider national scientific communities.

iii/ To evaluate the data available from the Afghan mine database and to assess it's suitability as a basis for current claims regarding reduced female fertility following exposure to blast and future comparative studies.

Data Exchange

During past contacts with the Kirov, great emphasis has consistently been placed by successive US delegations on the importance to the US of access to the Afghanistan mine injury data. Access has now been granted by the President of the University at not inconsiderable political risk because of his belief of the non partisan nature of medical data and the importance of international cooperation in this field. In addition it is incumbent upon us to investigate the source of the conclusion regarding the effect of blast on female fertility which is unrecognized in the West. We believe that a failure to exchange these databases at this stage would lead to irreparable damage to relations between the two Institutions and to the reputation of the US scientific community as a whole.

A visit to the Kirov is planned for this Summer to discuss the detail of the exchange. There would appear to be two basic options.

The first option is a simple exchange of photocopies of the Russian data for an electronic copy of the WDMET data plus supporting information technology support. Exchange would be followed by translation of a sample of the Russian records to evaluate their completeness and scientific value, particularly on the question of fertility following exposure to blast Limited exchange of staff would be required to ensure completeness of the data coming from Russia and to offer support to the Russians in the use of the WDMET database. This option has the advantage of being inexpensive, simple to accomplish, achieving exchange of information and fulfilling our moral obligation to the Russians. On the other hand this option is the minimum expected and would do little to encourage further exchange of ideas and information between the two scientific communities.

Option 2 will involve funding the Kirov Academy to translate their data into English and transfer it into electronic form. This option will necessitate the posting of a suitable USUHS representative to the Kirov Academy, either full or part time, to oversee the technical aspects of this option and to ensure completeness of data transfer. Simultaneously a member of the Kirov faculty will be attached to the USUHS staff to familiarize himself with the WDMET database and to oversee it's transfer to Russia.

This option will provide the Russians with considerable benefits and be a very concrete next step in the build up of mutual trust and respect between the two Institutions. The timing of the actual exchange might become a sensitive issue and, given the volatile political environment, changing circumstances in Russia may mean that we never actually gain access to the data.

In summary regarding information exchange, option one is quick, simple and most likely to achieve access to the Afghanistan data whereas option two is far more bold as an initiative to foster scientific collaboration and mutual trust, but there is a significant risk that it will fail to reach it's scientific objectives. We do not believe that option 2 would provide the data in a timely enough fashion to form the basis of a 1997 Conference

Scientific Validity

A number of scientific papers and a book have been written by the Russians from this data which are unintelligible to experts in the West. The scientific method practiced in Russia is very different from that found in the West which may explain this but there is some considerable doubt amongst mine injury experts in the West as to the true quality and value of the underlying data. On the other hand, we believe that although the resulting papers are the subject of some debate it is likely that the underlying raw data is of reasonable quality. A scientific body, fully aware of requirements for scientific validity in the US would not offer data up in such a high visibility way unless confidant that it would reflect well upon them. Nevertheless, on completion of the information exchange it would be wise to undertake a scientific validation of the data to confirm it's suitability for use within the Western scientific model. This would be undertaken by the Research Review Committee within USUHS and, if considered appropriate, include input from WRAIR and the International Community (eg ICRC and the Department of Post Conflict Surgery at University College London). Should the data be confirmed as a valid basis for further study, phase two would be commenced.

Phase 2 - Analysis of data and joint publication of position papers on the management of mine injuries

Goals and Objectives

The long term aim of collecting this data is to put it into a form which can be used to compare it with other databases, particularly the WDMET database and the ICRC mine injuries database held in Geneva, Switzerland. It therefore needs to be placed in to an open architecture relational database similar to that being employed by CCRC for the Force Surveillance Project and for the data fields to be as close as possible to other databases of interest. Initial discussions will be undertaken during phase 1 but on confirmation of the validity of the Russian data, a small working group to include members of the Kirov Faculty and ICRC will be established and mandated to reach concurrence on these issues. The data will then be entered onto the database which will be held jointly at USUHS and the Kirov and with open access to the rest of the scientific community. We expect that this facility will lead to a considerable amount of scientific debate and correspondence ahead of the proposed International Conference.

Data entry may be undertaken at either the Kirov or USUHS. And will take an estimated 10 man months per thousand records. Similar arguments to those governing the

implementation of phase 1 operate with regard to the implementation of phase 2. Data entry at the Kirov has considerable benefits in terms of rewarding Russian openness and building confidence through treating them as equal partners. It would also be considerably cheaper than undertaking it at USUHS unless Kirov Faculty or students were exchanged to undertake the work Data entry personnel with fluent Russian, an understanding of medical terminology and an ability to read doctors hand writing would otherwise be at a premium in the Washington area. QA issues will be less problematic at USUHS which from the scientific point of view is a key attraction of undertaking the work there.

A third option is to use CCRC contacts to establish a data entry facility in Sarajevo using Bosnian doctors, most of whom are fluent in Russian and are all too aware of the management of war wounded. Although an outsider, this option has attractions in terms of speed reliability and cost as well as the added benefits of value added to that community. In practical terms it is a very feasible option.

Phase 3 - An International Conference on the Management of Mine Injuries

Goals and Objectives

There is considerable international interest in the whole question of the effects of anti-personnel mines as pressure increases for a world wide ban .The US Government has embraced this movement and, with the exception of the Korean Peninsula, has agreed remove them from it's armories. At the same time there is a growing concern for victims of mine injuries, especially because of the high incidence of children amongst the dead and maimed. We believe that the time is right for an International Conference on the Management of Mine Injuries and that it will attract wide spread interest amongst the military medical communities around the world as well as non governmental agencies active in the management of such injuries. The conference will also focus on legal and ethical issues as a secondary agenda.

The conference is not dependent upon phases one and two but it's impact will be increased significantly by the availability of fresh raw data and the discussion that it would generate. The conference will be held over 3 days in Washington DC in the Fall of 1997 and be co-sponsored by USUHS and the Kirov, perhaps with the ICRC as a third partner. The conference will be organized along the lines of the Telemedicine National Forum earlier this year.

Annex F:

Protocol on the Intention to Conclude the Agreement between the Department of Defense of the United States of America and the Ministry of the Russian Federation on the Reciprocal Education Program for Military Medical Personnel

Protocol
on the Intention to Conclude the Agreement between the Department of Defense of the United States of America and the Ministry of Defense of the Russian Federation on the Reciprocal Education Program for Military Medical Personnel

The United States Department of Defense and the Ministry of Defense of the Russian Federation, hereinafter referred to as the "Parties", seeking to establish a reciprocal education program for military medical personnel declare:

1. The Executive Agent for the implementation of this Agreement for the U.S. Department of Defense may be the President of the Uniformed Services University of the Health Sciences (the "University"). The Executive Agent for the implementation of this Agreement for the Ministry of Defense of the Russian Federation may be the Director of the Military Academy of Medicine (the "Academy").

2. The Executive Agents shall, in the course of their activities in carrying out the Agreement, be governed by the Articles of the future Agreement.

3. The goal of this Agreement shall be increasing the qualification of the students and the effectiveness of their training to fulfill their future professional duties.

4. The following shall be fixed in the Agreement:

   a. the fields, in which the Parties have agreed to train specialists;

   b. prerequisites for the students.

The duration of the training and the curricula shall be mutually-agreed upon on the basis of the current Agreement.

5. Students designated for training shall be selected on a competitive basis by the sending Party.

6. Regarding academic issues, the students must follow the rules of and shall fall under the administrative jurisdiction of the accepting Party.

7. Students shall be under the supervision of their corresponding military attache from their country, who is located in the accepting country, in all non-academic matters.

8. In the event of an infraction of the rules students bear responsibility in accordance with the jurisdiction of the accepting Party.

9. Students shall be unaccompanied.

10. The cost of training of the students will not be paid on a mutual basis by the Parties. All other financial matters shall be determined in separate paragraphs in the Agreement.

11. Medical care of the participants shall be ensured in accordance with the laws and regulations of the accepting Party.

12. The Agreement will enter into force upon its signing. The duration of the Agreement, the order for changing the conditions of the Agreement or the conditions for terminating the Agreement shall be established in separate paragraphs of the Agreement.

13. The United States Department of Defense and the Ministry of Defense of the Russian Federation intend to conclude this Agreement on the Reciprocal Education Program for Military Medical Personnel after a detailed study of the text of the document.

Signed

For the Department of Defense of the United States of America

10 22.94

Signed

For the Ministry of Defense of the Russian Federation

Annex G:

USUHS - Kirov Academy Student / Faculty Reciprocal Visits

USUHS - KIROV ACADEMY

STUDENT / FACULTY RECIPROCAL VISITS

COMPUTERIZED CASUALTY DATA ACCESS AND INJURY PREDICTION MODELS:

- Database for Chemical Agent Casualties
- Afghanistan Casualty Care Data inclusion into Casualty Database
- Mine Injury Casualty Data inclusion into Casualty Database
- Injury Severity Scoring Systems
- Computerized Casualty Data Collection Mechanisms

UNIQUE ASPECTS OF CASUALTY CARE

- Wound Injury Assessment and Management Research
- Mine Injury Assessment and Management Research
- Tissue supersonic shock wave effects
- Physiologic Benefits of Acute Shock

TREATMENT ALTERNATIVES IN DISASTER / MASS CASUALTY SITUATIONS

- External Fixation for Field Care
- Crush Injury Management
- Direct Contributions of Telemedicine to Disaster Management

MEDICAL EDUCATION

- Experience in Casualty Management in Austere Environments
- Medical Care of Operational Diseases
- Organization for Medical Care in Deployed Medical Systems
- Static Teaching Methodologies for Ballistic Injury

Annex H:

Agreement between the Department of Defense of the United States of America and the Ministry of the Russian Federation on the Reciprocal Education Program for Military Medical Personnel.

AGREEMENT
BETWEEN
THE DEPARTMENT OF DEFENSE
OF THE UNITED STATES OF AMERICA
AND
THE MINISTRY OF DEFENSE OF THE RUSSIAN FEDERATION
CONCERNING
A RECIPROCAL EDUCATION PROGRAM FOR MILITARY MEDICAL PERSONNEL

The Department of Defense of the United States of America and the Ministry of Defense of the Russian Federation, hereinafter referred to as the Parties, seeking to establish a reciprocal education program for military medical personnel, have agreed as follows:

SECTION I
EXECUTIVE AGENTS

1. The Executive Agent for the implementation of this Agreement for the Department of Defense shall be the President of the Uniformed Services University of the Health Sciences (the "University"). The Executive Agent for the implementation of this Agreement for the Ministry of Defense shall be the Director of the Russian Military Academy of Medicine (the "Academy").

2. The Executive Agents may conclude administrative arrangements to implement this Agreement. In the event of a conflict between such arrangements and this Agreement, the terms of this Agreement shall control.

SECTION II
ACADEMIC PROVISIONS

1. The program is intended to enhance the ability of military students in the health sciences to perform their future duties, and to establish relationships between the University and the Russian Military Academy of Medicine, by which their experience, professional knowledge, and facilities may be shared to mutual benefit.

2. The University and Academy shall accept from each other, mutually agreed numbers of military medical students and representatives for periods of training or instruction. Selection of participants, duration of their training, and their training schedules, shall be arranged in advance by mutual agreement.

3. Russian students may be nominated for specialized military medical instruction at the University, in which case admission shall be on a competitive basis and those accepted must meet the University's academic requirements.

4. Students shall be required to comply with the academic regulations, orders, instructions, and customs of the host Party as enforced by the President of the University or Director of the Academy, or their authorized representatives. In other than academic matters, participants shall be administered and controlled as prescribed by their parent Party. The President or Director may, at their discretion, discharge participants who do not meet the requirements of their respective programs. Participants may also be discharged for disciplinary reasons under Section III of this Agreement.

5. Evaluation reports on participants shall be prepared and submitted by appropriate officials of the host Party, in accordance with the procedures of and on request of the sending Party.

6. The Parties shall, to the extent authorized by the laws and regulations of their Governments, provide participants access to data, materials, facilities, and geographic locations, as necessary for conduct of the program.

7. Students shall be unaccompanied.

SECTION III
ADMINISTRATION

1. Costs of participation, including transportation costs for active participants and those discharged from a program, shall be borne by the participant's military service, or by the participant, except that costs of tuition are waived by the Parties.

2. Participants shall be under the administrative control of the host Party for academic training matters, and under their respective Government's Defense Attache for all other administrative matters in the host country.

3. Participants shall be required to:

a. Respect the laws and customs of the host country and, while in the host country, abstain from any political activity or activity inconsistent with the purposes of this Agreement.

b. Be in possession of appropriate documentation issued by their country which is required by the host country for entry and exit.

c. Be in possession of appropriate documentation issued by either Party for identification of other purposes.

4. Participants shall be required to comply with regulations of their parent Party in wearing of the uniform, and with customs of the host Party in regard to civilian attire.

5. Discipline:

a. Participants shall be instructed to obey lawful orders or instructions of appropriate officials of the host Party, insofar as they are reasonably consistent with the regulations and customs of their parent Party. If required, a participant's parent Party shall enforce the provisions of this agreement by issuance of a lawful order.

b. Infractions of military or civil laws or regulations shall be reported immediately to the participant's Defense Attache.

c. Participants who violate the military or civil laws or regulations of the host Party may be dismissed from the host Party's program with a view toward further administrative or disciplinary action by the Party. Such dismissal shall not affect the right of civil authorities of the host Party to exercise civilian legal jurisdiction (criminal or civilian) over the participant. Officials of the host Party will convey any information relating to a civil case to the Defense Attache of the participant, and provide appropriate assistance as requested by the Defense Attache.

6. Health care for participants shall be provided insofar as authorized by the laws and regulations of the host Party.

7. The Parties shall, on reasonable request, permit inspection of appropriate training and clinical facilities by agencies responsible for accreditation of medical training programs.

8. Participants shall comply with security instructions and directives provided by the host Party.

SECTION IV
FUNDS

The obligations of the Parties under this agreement are subject to availability of funds.

SECTION V
DISPUTE RESOLUTION

1. Any disagreement regarding the interpretation or application of this Agreement shall be resolved by the Parties and not referred to an international tribunal or third party for settlement.

SECTION VI
ENTRY INTO FORCE, DURATION, AND TERMINATION

1. This Agreement shall enter into force upon signature and

shall remain in force for a period of five years from date of last signature unless terminated as specified in paragraph 3 of this Section. The termination date may be extended by written agreement of both Parties.

2. This Agreement may be amended by written agreement of both Parties.

3. This Agreement may be terminated by written notice of either Party; provided, that twelve months must elapse before the termination is effective unless a different termination date is agreed to in writing by both Parties.

4. The English language text of this Agreement shall be the governing text in the case of conflict between the different language texts.

SECTION VII
NOTICE OF INTENT

The Department of Defense of the United States intends to conclude an Agreement with the Ministry of Defense of the Russian Federation which will provide a framework for the Exchange of Defense Professionals between the two Governments. When that Agreement is concluded, the Parties understand that this Agreement will be subsumed as an Annex within that Agreement.

Done at Bethesda, Maryland

this 20th day

of October, 1994

For the Department of Defense
of the United States of America

Done at _____

this _____ day

of _____, 1994

For the Ministry of Defense of
the Russian Federation.

Annex I:

Letter from Stephen C. Joseph M.D., M.P.H., Assistant Secretary of Defense (Health Affairs) to Lieutenant General Ivan Chizh, Chief Surgeon, Ministry of Defense, Moscow, Russia

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D. C. 20301-1200

HEALTH AFFAIRS

MAY 1 0 1994

Lieutenant General Ivan Chizh
Chief Surgeon
Ministry of Defense
Moscow, Russia

Dear General Chizh:

Since the visit of the delegation from the Uniformed Services University of the Health Sciences, led by Brigadier General Rostik Zajtchuk, to the Kirov Academy of Military Medicine in April, 1992, we have desired to finalize an agreement, such as was proposed, to develop joint projects. Due to the high level of interest in our relationship, the agreement has been studied and re-written to meet legal requirements which formally define an open and continuous relationship. This process has taken much more time than originally anticipated. I am pleased that you are reviewing the agreement that was sent to you by General Zajtchuk to allow the Kirov Academy and the Uniformed Services University of the Health Sciences to conduct joint projects and student/faculty exchanges.

I wish to invite you and appropriate member of your staff and the staff of the Kirov Academy to come to Washington, D.C. to finalize the agreement. General Nechaev has knowledge of this project from its beginning. If you would find it helpful, I would extend my invitation to include him also. During your visit, working groups would meet to define specific proposals suitable for funding. We would host you and your delegation anytime between 25 September and 10 October 1994. Project officers from the Uniformed Services University will contact your staff to develop details of itinerary and specific arrangements acceptable to you.

Your visit would commence efforts under this agreement which I believe will be beneficial to our institutions, the international medical community and both of our countries. The potential for cooperative efforts in this arena has generated considerable interest within our Department of Defense, Department of State, Department of Health and Human Services and several American universities. We are now ready to move forward with this proposal. I look forward to your arrival in Washington, D.C.

Sincerely,

Stephen C. Joseph, M.D., M.P.H.

Annex J:

Visit Schedule of Russian Delegation

Version 10.14 11:00 hrs

Sunday, October 16 **OD: LTC Hagmann**

0700	
0715	
0730	
0745	
0800	
0815	
0830	
0845	
0900	
0915	
0930	
0945	
1000	
1015	
1030	
1045	
1100	
1115	
1130	
1145	
1200	
1215	
1230	
1245	
1300	Van, phone, pagers, radios ready for mission
1315	
1330	
1345	
1400	
1415	
1430	Driver arrives at Marriott for orientation
1445	All players meet at Marriott
1500	Van #1 transports welcoming party to Dulles
151 5	
1530	Arrival @ Dulles, Aeroflot flight no. 317
1545	-Dr. Sokhin, LTC Hagmann, Maj. Lawrence, LT Torres/Dorsey, OSIA interpreters
1600	-clear customs
1615	-transport to Dulles Marriott, Van #1 end mission
1630	
1645	
1700	
1715	
1730	
1745	
1800	
1815	
1830	
1845	
1900	Briefing at Marriott Conference Room (available until 2300 hrs)
1915	
1930	
1945	

Van #1 = Ft. Detrick 15 passenger van with duty driver

Monday, October 17 **OD: Maj. Lawrence**

0700	Van #1 with LT Torres/Dorsey @ Marriott 0645 hrs, depart for USUHS @ 0700
0715	Interpreters provided by O.S.I.A.: HM2 Glenn Dowling
0730	SSgt Robert Hale
0745	Continental Breakfast @ Board of Regents Room, Bldg. D, 3rd Flr. (Mike, 5-6263)
0800	Welcome to USUHS- Dr. Zimble (Mary, 5-3013)
0815	Briefing: Overview of USUHS - COL Hepler (Rosa, 5-2690)
0830	Academic Program - Dr. MacDonald (Sue, 5-3185)
0845	Military Medicine - Dr . Llewellyn (Ann, 5-3720)
0900	USUHS tour - University Affairs (SSgt. Sharp, 5-3886)
0915	
0930	
0945	
1000	Depart for Willard Hotel
1015	1401 Pennsylvania Ave, NW
1030	
1045	
1100	Fisher Luncheon (POC: Stephanie Kornfeld, 212/957-7020)
1115	
1130	
1145	
1200	
1215	
1230	
1245	
1300	
1315	Van #1 with OSIA arrives @ Willard for pickup
1330	
1345	Depart Willard for Pentagon
1400	Meeting with Dr. Joseph (POC: Roberto Gonzales - 703/697-2111)
1415	
1430	
1445	
1500	Meeting with Dr. Dorne (ASD for Personnel & Readiness) (POC: Renee 703/695-5254)
151 5	
1530	
1545	
1600	Approximate departure for Marriott/driving tour (Arlington Cemetery, Iwo Jima, etc.)
1615	
1630	
1645	
1700	
1715	
1730	
1745	
1800	
1815	
1830	
1845	Van #1 drives delegation & OSIA to dinner; Maj. Lawrence accompanies party to door
1900	Dinner @ LaTaberna del Alabardero, hosted by Dr. Joseph
1915	1776 I Street, Washington, DC.
1930	
1945	Van #1 returns delegation to Marriott after dinner; end mission

Van #1 = Ft. Detrick 15 passenger van with duty driver

Tuesday, October 18 OD: Maj. Lawrence

0700	
0715	
0730	
0745	Breakfast at Marriott
0800	Van #1 with LT Torres/Dorsey & OSIA personnel arrive at Marriott for pickup
0815	Transport to Walter Reed Army Medical Center
0830	
0845	
0900	Tour Walter Reed (POC: Sharon Anderson - 202/576-3329)
0915	-Briefing @ COL Zajtchuk's office
0930	-Visit Ward 68 (Gen Surgery)
0945	
1000	-Telemedicine (Room 6Z80)
1015	
1030	-Visit Ward 71 (Medicine; Russian colonel inpatient)
1045	
1100	-Visit Dialysis Ward, OR, & SICU on 4th floor
1115	
1130	Lunch @ WRAMC- Bldg #2, Wd 72 Executive Suite (Guest includes 5 Delegates, Dr. Bellamy, Dr. Sokhin, COL Zajtchuk, Dr. Barry, Maj. Lawrence, LT Torres/Dorsey, & OSIA) (POC: MAJ Holland - 202/576-1792 or 3914)
1145	
1200	Van #2 departs for APG (LT Dorsey, HM2 Dowling)
1215	
1230	Van #1 with Delegation, Maj. Lawrence and SSgt. Hale to Forest Glen
1245	Van #1 arrives at Helopad
1300	Transport to Aberdeen Proving Grounds (APG) via helicopter
1315	(POC: SFC Bryan - 202-576-0833)
1330	
1345	Arrival at Weide Airfield, Edgewood Area, Aberdeen Proving Grounds
1400	Tour Institute of Chemical Defense hosted by COL Hurst, Commander
1415	(POC Lloyd Roberts-DSN 584-3628); "Mission Overview" Bldg E-3100, Rm 14
1430	Laboratory Tours
1445	
1500	
1515	
1530	
1545	
1600	Transport via helicopter to Dulles Airport\Van #2 to depart for Marriott
1615	
1630	Van #1 meet Delegation at Hawthorne helipad, transport to Marriott
1645	(Van #1 dismissed)
1700	
1715	
1730	Van #2 arrives @ Marriott
1745	
1800	Van #2 & LTC Hagmann's car to China Gourmet Restaurant, Rockville, MD
1815	(Delegation, LTC Hagmann, LTC Tsuchida, Maj. Lawrence, OSIA)
1830	
1845	
1900	
1915	
1930	
1945	

Van #1 = Ft. Detrick 15 passenger van with duty driver
Van #2 = CCRC Rental

Wednesday, October 19 **OD: LT Torres/Dorsey**

0700	Breakfast at hotel
0715	
0730	Van #1 at Marriott
0745	Transport to AUSA (Delegation, CPT Stack, Dr. Sokhin, LT Torres/Dorsey, OSIA)
0800	
0815	
0830	
0845	
0900	Arrive @ Sheraton D.C. , link up with BG Zajtchuk & LTC Hagmann
0915	Tour AUSA Convention, including Force XXI exhibit
0930	
0945	
1000	
1015	
1030	
1045	
1100	
1115	
1130	
1145	
1200	
1215	
1230	
1245	
1300	Van #1 transport to Ft. Detrick (POC: PJ Showe - 301/619-2732)
1315	(Delegation, CPT Stack, Dr. Sokhin, LT Dorsey, OSIA)
1330	
1345	
1400	Arrive @ Ft. Detrick, box lunch & command briefing @ MMRC HQ
1415	
1430	
1445	Van #1 transport to USAMRIID
1500	Command Briefing (COL Takafuji)
1515	Tour USAMRIID
1530	
1545	
1600	Van #1 transport to Marriott and prepare for dinner
1615	
1630	
1645	
1700	
1715	
1730	
1745	
1800	
1815	Van #1 transport to Dinner
1830	
1845	
1900	Dinner with BG Zajtchuk @ La Bergerie, 218 N. Lee St., Alexandria, Va.
1915	703/683-1007
1930	(Delegation, Dr. Stack, Dr. Sokhin, OSIA; LTC Hagmann to link up at later time)
1945	Van #1 returns Delegation to Marriott after dinner

Van #1 = Ft. Detrick 15 passenger van with duty driver

Thursday, October 20 OD: LT Torres/Dorsey
LTG Shevchenko

0700 0715 0730 0745	Dr. Stack's car - LTG Shevchenko & HM2 Dowling to WRAMC, Ward 45 (POC: Dr. Barry, 202/576-1433)
0800 0815 0830 0845	
0900 0915 0930 0945	
1000 1015 1030 1045	
1100 1115 1130 1145	
1200 1215 1230 1245	Lunch at WRAMC
1300 1315 1330 1345	
1400 1415 1430 1445	
1500 1515 1530 1545	
1600 1615 1630 1645	
1700 1715 1730 1745	Return to Marriott in Dr. Stack's car
1800 1815 1830 1845	
1900 1915 1930 1945	Van #2 & #3 to Outback Steakhouse, Centerville, VA (Delegation, LTC Hagmann, Maj. Lawrence, CPT Stack, & OSIA)

Thursday, October 20 OD: LT Torres/Dorsey
CGEN Chizh, COL Pluzhnikov, COL Vasilchenko, LTC Furgal

0700 0715 0730 0745	Breakfast at Marriott
0800 0815 0830 0845	Van #2 & #3 depart Marriott for Ft. Meade (Delegation, CPT Stack, LT Torres/Dorsey, SSgt. Hale)
0900 0915 0930 0945	Arrive @ Ft. Meade, tour static display of 85th Gen Hospital, link up with LTC Hagmann and Maj. Lawrence (MAJ Kaminski, 410/677-6419)
1000 1015 1030 1045	Van #2 & #3 depart Ft. Meade for USUHS
1100 1115 1130 1145	Arrive USUHS, Delegation moves to Room A2052 to meet students (COL Collins & 12 MS I&II students)
1200 1215 1230 1245	Luncheon with USUHS faculty (informal) @ Executive Dining Room - LTC Hagmann
1300 1315 1330 1345	Meet with VADM Zimble in Bldg. A BG Zajtchuk arrives @ USUHS; agreement proposal discussed
1400 1415 1430 1445	Van #2 & #3 depart USUHS to Marriott (Delegation, Maj. Lawrence, CPT Stack, & OSIA) Van #2 & #3 arrive @ Marriott
1500 1515 1530 1545	Van #2 departs to Tyson's Corner for shopping (CGEN Chizh, COL Pluzhnikov, Maj. Lawrence, & CPT Stack) COL Vasilchenko, LTC Furgal, & SSgt. Hale translate protocol document @ Marriott
1600 1615 1630 1645	
1700 1715 1730 1745	Van #2 returns to Marriott
1800 1815 1830 1845	
1900 1915 1930 1945	Van #2 & #3 to Outback Steakhouse, Centerville, VA (Delegation, LTC Hagmann, Maj. Lawrence, CPT Stack, & OSIA)

Van #2 = CCRC rental
Van #3 = USUHS vehicle

Friday, October 21
LTG Shevchenko

OD: LT Torres/Dorsey

0700 0715 0730 0745	Dr. Stack's car - LTG Shevchenko & HM2 Dowling to WRAMC for CT Surgery Morning Report, Ward 45
0800 0815 0830 0845	
0900 0915 0930 0945	LTG Shevchenko Lecture @ WRAMC Cardiology Conference Room
1000 1015 1030 1045	
1100 1115 1130 1145	Depart WRAMC with Dr. Sokhin, LT Torres, & HM2 Dowling
1200 1215 1230 1245	USUHS Tour (SSgt. Jay Sharp, University Affairs, 5-3886) Lunch
1300 1315 1330 1345	Meet with Dr. Zimble, LTC Hagmann, & Dr. Sokhin
1400 1415 1430 1445	Depart USUHS for Marriott in Dr. Stack's car Arrive @ Marriott and link up with Delegation
1500 1515 1530 1545	Van #1 & Van #2 depart for Dulles with Delegation, Dr. Sokhin, LTC Hagmann, Maj. Lawrence, CPT Stack, & LT Torres/Dorsey CGEN Chizh & COL Pluzhnikov depart on Aeroflot Flt. No. 318
1600 1615 1630 1645	Van #1 & #2 return to Marriott
1700 1715 1730 1745	
1800 1815 1830 1845	Van #2 & CPT Stack's car to Chi Chi's in Fairfax, VA (Delegation, LTC Hagmann, Maj. Lawrence, CPT Stack, & OSIA)
1900 1915 1930 1945	

Van #1 = Ft. Detrick 15 passenger van with duty driver
Van #2 = CCRC rental

Friday, October 21 OD: LT Torres/Dorsey

CGEN Chizh, COL Pluzhnikov, COL Vasilchenko, LTC Furgal

0700	Breakfast at Marriott
0715	
0730	
0745	Van #1 & #2 depart for Ft. Belvoir with CPT Woodhouse, Maj. Lawrence, & LT Dorsey
0800	
0815	
0830	
0845	
0900	Arrive at DeWitt ACH (COL Harvey, 703/805-8025)
0915	Medical Supply overview by COL Donahue
0930	
0945	
1000	Tour DeWitt (lab, x-ray, OR, & wards)
1015	
1030	
1045	Depart Ft. Belvoir enroute to Quantico (COL Donahue accompanies)
1100	
1115	
1130	Arrive at Quantico clinic, pickup LT Portis & LCDR Konya
1145	Arrive at TBS clinic & tour facilities
1200	
1215	
1230	
1245	Van #1 departs Quantico for Marriott, Van #2 detours to Ft. Belvoir to return COL Donahue
1300	
1315	
1330	
1345	Van #1 arrives @ Marriott; Van #2 departs Ft. Belvoir to USUHS to return CPT Woodhouse
1400	Lunch @ Marriott with BG Zajtchuk & LTC Hagmann
1415	
1430	
1445	Van #2 arrives @ Marriott
1500	Van #1 & Van #2 depart for Dulles with Delegation, BG Zajtchuk, Dr. Sokhin,
1515	LTC Hagmann, Maj. Lawrence, CPT Stack, & LT Torres/Dorsey
1530	
1545	CGEN Chizh & COL Pluzhnikov depart on Aeroflot Flt. No. 318
1600	Van #1 & #2 return to Marriott
1615	
1630	
1645	
1700	
1715	
1730	
1745	
1800	Van #2 & CPT Stack's car to Chi Chi's in Fairfax, VA
1815	(Delegation, LTC Hagmann, Maj. Lawrence, CPT Stack, & OSIA)
1830	
1845	
1900	
1915	
1930	
1945	

Van #1 = Ft. Detrick 15 passenger van with duty driver

Van #2 = CCRC rental

Saturday, October 22 **OD: LTC Hagmann**

LTG Shevchenko, COL Vasilchenko, LTC Furgal

0700 0715 0730 0745	
0800 0815 0830 0845	
0900 0915 0930 0945	Van #1 - transport LTG Shevchenko, COL Vasilchenko, & LTC Furgal to CCRC with Dr. Stack Continental Breakfast @ CCRC
1000 1015 1030 1045	Round table discussion (Delegation, COL Bellamy, LTC Hagmann, Maj. Lawrence, Dr. Sokhin, Dr. Pruett, CPT Stack, LT Torres/Dorsey, & OSIA)
1100 1115 1130 1145	
1200 1215 1230 1245	Van #1 departs for Washington, D.C. sightseeing (Delegation, Maj. Lawrence, CPT Stack, Dr. Sokhin, & OSIA) -Lincoln Memorial, Jefferson Monument, Capitol Bldg., Arlington Cemetery w/ JFK grave site
1300 1315 1330 1345	
1400 1415 1430 1445	
1500 1515 1530 1545	Van #1 arrives @ Marriott
1600 1615 1630 1645	Van #1 departs Marriott for BG Zajtchuk's house Arrive @ BG Zajtchuk's house for cocktails; Van #2 with LTC Hagmann arrives
1700 1715 1730 1745	Van #2 & BG Zajtchuk's car depart for Hyatt
1800 1815 1830 1845	Banquet @ Hyatt Regency Hotel, Bethesda (301/657-1234)
1900 1915 1930 1945	Van #1 returns Delegation to Marriott @ 2300 hrs

Van #1 = Ft. Detrick 15 passenger van with duty driver

Van #2 = CCRC rental

Sunday, October 23 **OD: Maj. Lawrence**

LTG Shevchenko, COL Vasilchenko, LTC Furgal

0700	
0715	
0730	
0745	
0800	
0815	
0830	Breakfast @ Marriott (Maj. Lawrence, LT Torres/Dorsey, OSIA, & Delegation)
0845	
0900	
0915	
0930	Van #2 & CPT Stack's car depart for shopping tour
0945	(WalMart, Circuit City, Today's Man clothing store, Little Professor Book Store)
1000	
1015	
1030	
1045	
1100	
1115	
1130	
1145	
1200	
1215	
1230	
1245	
1300	
1315	
1330	Van #2 & CPT Stack's car return to Marriott
1345	
1400	
1415	Lunch @ Marriott (Delegation, BG Zajtchuk, COL Zajtchuk, LTC Hagmann,
1430	Maj. Lawrence, CPT Stack, Dr. Sokhin, LT Torres/Dorsey, & OSIA)
1445	
1500	Van #2 & #3 depart Marriott for Dulles
1515	
1530	
1545	
1600	
1615	
1630	
1645	
1700	Delegation departs Dulles, Aeroflot Flt. No. 318
1715	
1730	
1745	
1800	
1815	
1830	
1845	
1900	
1915	
1930	
1945	

Van #2 = CCRC rental
Van #3 = USUHS vehicle

Annex K:

Letter from Dr. Val G. Hemming to General Schevchenko

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
F. EDWARD HÉBERT SCHOOL OF MEDICINE
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

June 19, 1997

OFFICE OF THE DEAN

TEACHING HOSPITALS
WALTER REED ARMY MEDICAL CENTER
NAVAL HOSPITAL, BETHESDA
MALCOLM GROW AIR FORCE MEDICAL CENTER
WILFORD HALL AIR FORCE MEDICAL CENTER

Commander
Russian Military Medical Academy
St. Petersburg, Russia

Dear General Schevchenko:

Part of the developing relationship between the Russian Military Medical Academy and the Uniformed Services University of the Health Sciences (USUHS) has involved a commitment to develop student exchanges. Previous discussions between members of our staffs have resulted in a proposal and funding for two students from your Academy to attend part of the Military Medicine curriculum at USUHS. The program consists of a classroom and field training phase followed by exposure to clinical situations.

As Dean of the School of Medicine (SOM), I want to extend a formal invitation for two Academy students to participate in Military Medicine courses for the 60-day period from 1 July through 31 August 1997. All costs associated with the students' study at USUHS-SOM, as well as travel costs to and from St. Petersburg, will be covered by Military Officer Education Program funds. I am delighted at this opportunity for the USUHS-SOM to participate in the growing educational relationship between our institutions and countries. My point of contact for this student exchange at USUHS is LTC John Hagmann (301-295-6263).

Sincerely,

Val G. Hemming, M.D.
Colonel USAF (Retired)
Dean

Annex L:

Information on Russian Medical Students

Sergei V. Iskrovsky, 6-th year student of Russian Medical Military Academy, 2LT of the Russian Army MC, presents a scientific report :

"The development of internal osteosynthesis and its application in the treatment of gunshot fractures of bones of the extremities".

This report includes a historical review of the development of internal osteosynthesis, modern opinion on methods and materials, applied by Russian military surgeons, clinical research of the effectiveness of internal osteosynthesis with electret - plated plates, developed in RMMA, in the treatment of gunshot fractures of bones of the extremities which includes several case reports. An author also compares the effectiveness of biological plates (like AO) and modern (electret-plated) ones.

The report also includes a videomovie "Osteosynthesis With Titanum Plates" , which was made by Medvideo company, Saint Petersbourgh, in the Military Trauma And Orthopedics Department of Russian Medical Military Academy. It includes fragments of surgeries, case reports and interesting interviews with professors and staff.

If you have any questions on this topic , please, e-mail me.

My e-mail adresses are :

- **sergeiiskr@hotmail.com**
- **sergeiiskr@supernews.com**
- **serg@iskra-ts.spb.su**

Nickolas N.Ruhliada, 5-th year student of Russian Medical Military Academy.

Topic of report:

"1. Actoprotectors - new pharmacological class of drugs.

2. Bemithyl application in prevention and treatment of labor weakness (protraction)."

The report includes data of latest research work performed in the departments of Pharmacology and Obstetrics & Gynecology. First part is devoted to new class of drugs - actoprotectors, developed in RMMA for troops' endurance and physical serviceability improvement. After long investigations they have appeared to have a number of other valuable qualities: antihypoxic, antioxidant effects. Of a most interest is their ability to decrease the number of spontaneous mutations. The second part of report - is a good example of actoprotector application in OB clinic. Research work done by author proves high effectiveness of Bemithyl (actoprotector) in labor weakness (protraction) prevention and management.

If you have any questions on this topic, please mail me.

My e-mail addresses are :

- **nickolasr@hotmail.com**
- **nickolas@supernews.com**

Annex M:

Proposal to Develop an Israeli National Casualty Database

Casualty Data Access Project

The Israeli National Casualty Data Base

Introduction

There have been discussions over a number of years between CCRC and other US military Agencies and various bodies within Israel aimed at developing a joint approach to casualty data collection. In the past there has been an unwillingness or inability on the part of the Israelis to allow access to scientifically valid data.The shortcomings have been the anecdotal character of the available information and the lack of any denominator data.

CCRC was approached by LTC Ami Cohen at the beginning of April 1996 with a new proposal which answers many of those concerns. We believe that the revised proposl is sufficently strong on medical and scientific grounds and of sufficient value to proceed. There are however, political factors which must be considered on which we are not qualified to comment and which must be satisfied prior to implementation.

General Outline

LTC Cohen is a thoracic surgeon who is both an Israeli citizen living in Isarael and a Reserve Officer in the US Army. He visits the US annually to perform his reserve duty at WRAMC and was tasked on this occasion by the Israel Surgeon General to deliver the following proposal.

Israel is in the process of devloping a National Casualty Database with the intention of auditing their performance, comparing it with other centers and thereby developing a scientifically based tool with which to improve care of the injured. They acknowledge that they have little expertise in this field and that CCRC are amongst the world leaders. The proposal therefore is to use US expertise in general and CCRC's in particular to develop a data collection instrument and database in return for open access to the collected data.

Data Collection Instrument

The Data Collection Instrument would be based on that devised for the WEDMT Program and further devloped by CCRC for the ForSurv Project due to be deployed into Bosnia. The data would be collected prospectively by dedicated data collectors resident in Israel. In addition, an attempt would be made to collect retrospective data from previous incidents, a minimum would be data from the 6 recent bus bombs and casualties resulting from the current incursions into South Lebanon. The data collectioninstrument would include detailed information regarding the weapons (type, range, relative location etc), baseline data (including the non injured) and full clinical details including final outcome. Interviews with those involved and a detailed pictorial record of the incident would also be included. The Israeli SG has apparently promised direct, complete and immediate access to data to include data collectors being included in the call out roster following an incident and inclusion within any military operation. This would need to be confirmed.

The Data Collection Instrument would be located on Pentium based IBM Thinkpad Laptop computers (16Mb of RAM and 1.2Gb HDD) similar to those being deployed to Bosnia. Depending upon timeframes it is likely that these would be merely be redeployed following Operation Joint Endeavour. Information would be downloaded through a 28.8 Modem with the possibility of using an Inmarrsat B satellite (also redeployed) from remote locations.

The data collection instruments would feed simultaneously into two servers located at USUHS and in Israel.

DataBase

The database would be included within the CCRC database being developed for the Force Surveillance Project in collaboration with Oracle. Casualty data will be recorded using the ICD 9 classification and the ICRC classification of war injuries to ensure comparability with modern sources.This is a a very open database which we hope will expand in the future to include other sources. Real comparison would become possible and the database would develop into a unique resource within military medicine. It's openess also allows interrogation from researchers and scholars worldwide. A "firewall" will be built into the database to limit access should circumstances change. This main database will already be operational and although some modification and restructuring will be necessary, this will not be expensive.

Data Collectors

A major problem which we forsee is that the nature of terrorist attacks and military operations in Israel and therefore the incidence of casualties is very spasmodic. On the other hand, the numbers of casualties and the amount of data which we would aim to collect following such an incident are considerable. We will employ a full-time Head of Office, probably a recently retired O6 equivalent with an understanding of the concept and the respect of the medical establishment . He will in turn recruit and train (with CCRC assistance) 5 "reservist" data collectors who would be called up as required. The individuals would be retired military doctors who would regard this as a very valuable contribution in their retirement. As ever, selection of data collectors is the key to success and we are assured that eminently suitable candidates are readily available. The number of Reservists can obviously be adjusted as circumstances change.

Command and Control

An effort such as this is collaboratve in nature will rely on good management for success. The data collectors and data will be Israeli whereas the knowhow, equipment, money. and gateway to other databases for comparison is American . The Israeli assumption is that we will fund the data collectors. Itis wise for us to do that so that we retain ultimate control over the data collection effort.

The Israeli operation will be a stand alone operation from a day to day point of view. The Head of Office, however, will be a member of the USUHS faculty and employed directly by CCRC through the Henry Jackson Foundation. It will be overseen by a Principal Investigator from CCRC.

Establishment of the Office in Israel will require a visit of about 1 month by the responsible PI supported by a technical expert and the Head of Office from the Force Surveillance Project in Bosnia. They will recruit the Head of Office, build the required infrastrucure and develop the appropriate contacts within the Israeli establishment. With the Head of Office they will recruit and train the reservist data collectors. This process will be undertaken in a similar manner to the briefing and establishment of the Force Surveillance Project. LTC Cohen has offered to help in this regard and to act as our liaison with the Israeli Defence Force.

Once established there will be a bi-annual liaison trip (one each way) to oversee the project, audit the acounts etc. The responsible PI or other faculty member would deploy to Israel in the event of a major incident at least until we are satisfiedthat the system is working and that the data collection od reliable. There will also be a requirement for joint conference presentations and preparation of joint papers resulting from the data collected. We estimate that this will take 1/2 PI time in the first year. probably reducing to 1/4 subsequently.

Timeframe

The Israeli Army Medical Service is planning to hold a conference on the management of casualties ofwar in November 1996 and they aim to present this concept there. The Force Surveillance Project in Bosnia is expected to be complete by the end of December 1996. The timeframe is therefore:

May to November 1996
Gain the necessary approval on both sides and negotiate the final deatails of the project.

November 1996
Present the interim findings from the Force Surveillance Project at the Israeli Military Conference followed by a joint presenataion of this project and a signing of MOU.

January 1997
Redeploy equipment from Bosnia to Israel
Recruit Head of Office and data collectors
Establish Office in Israel
Train data collectors

February 1997
Israeli Data Collection Team Operational

Budget

The budget for the first and subbsequent years is as follows:

First Year

Personnel

Principal Investigtor CCRC (50%)	100
Head of Office - Israel	60
Data Collectors training course time (5 x 1 week)	2.5
Data Collectors (assuming 3 months work @ $30Kpa)	47.5
(contingency to increase this up to full time must be written in)	
Total	$210K

Equipment

Data Base Upgrade	200
Computer Main Server - Israel	8
Monitors and Key Boards to connect with Laptops (5@$900)	4.5
All other equipment will be redeployed from Bosnia repesenting a leveraging of $36K	
Office equipment	5
Office rent	TBC
Team Vehicle	TBC
Total	iro$250K

Travel

Management Of War Wounds Conference Israel (will require a Major delegation because of MOU signing)	TBC
Initial setup visit (3 CCRC for 1 Month)	10K
4 liaison trips	10K
Total	iro $4OK
Administrative Services esp related to drawing up of MOU	$50K
HMJF Overhead	$40K
Grand Total	$ 590K

Subsequent Years

Personnel

Principal Investigtor CCRC (25%)	50
Head of Office - Israel	60
Data Collectors training course time (5 x 1 week)	2.5
Data Collectors (assuming 3 months work @ $30Kpa)	47.5
(contingency to increase this up to full time must be written in)	
Total	$160K
Administrative costs Israel	$20K
Travel	$20K
Administrative overhead (include HMJF)	$50K
Total	$250K

Annex N:

Force Surveillance Project Implementation Plan

Force Surveillance Project
Implementation Plan

Proposal

In the original project document the Casualty Care Research Center (CCRC) of the Department of Military and Emergency Medicine of the Uniformed Services University of the Health Sciences proposed to undertake a personnel attrition data collection effort within Operation Joint Endeavor in Bosnia Herzegovina to allow the development of new knowledge regarding Force attrition and personnel factors in deployed operations. It will achieve this by developing a data collection instrument which is laptop computer based and operated by pairs of data collectors. These instruments will feed into an inter relational database which will be open and readily available to all interested parties within the operations planning, medical and personnel communities.

Definition of Attrition

For the purposes of this Project and with the general agreement of the Commanders in Theater, attrition is defined as an individual loss to full duties for 24 hrs or more from whatever cause. It therefore includes personnel who are placed on restricted duties within the confines of their base location.

Background

The success or failure of a military operation depends upon the ability to deploy and maintain sufficient combat force. An understanding of the causes and circumstances resulting in the loss of deployed military personnel allows accurate planning of personnel and logistic requirements and can lead to strategies of prevention and mitigation. The limitation to such prediction is a lack of information concerning past experience relative to particular tactical situations and environments. Military services throughout history have made great efforts at retrospective reviews of personnel losses in various operations. Unfortunately, such retrospective analysis is based on narrowly defined records completed for other purposes. The tactical context is not recorded. Reporting requirements placed on operational personnel which are not immediately relevant to the mission are ineffective and inappropriate. Deployed staff and medical personnel are stressed to perform their duties in support of the operation. Data collection must be an effort separate from routine staff functions.

In order to be of use in addressing future issues, a selectively retrievable database must be created which is sensitive to the changing roles of the Armed Forces. Such a tactical/casualty relationship format and data collection proposal has been developed by the Casualty Care Research Center through a grant from the U.S. Army Medical Research and Development Command. Experience with other casualty databases demonstrates the depth of information which can only be

achieved through collection of image, voice, and document support for descriptive data. Implementation of this concept would result in the development of standardized datasets and dedicated data collection teams to capture perishable information concerning the loss of personnel for medical or administrative reasons from deployed units. The most significant product would be a multimedia computer database capable of providing essential information for operational, logistic, and medical support planning.

The questions to be addressed from deployment experience include many specific studies of morale, stressors, preventive medicine issues, and other performance decrements. Multiple isolated studies have been undertaken in past deployments and are proposed for Operation Joint Endeavor. The question of Gulf War Syndrome resulted in a very difficult, painstaking effort to retrospectively reconstruct epidemiological cohorts based on unit strengths, locations and activities. Prospective studies of deployed personnel are proposed for several of these topics. The military leadership has placed a requirement on this type of proposed in country research efforts; that they be consolidated into a single umbrella data collection or study administration framework.

Concept of Study

The Force Surveillance Project is unique in that it will attempt unit based (Company/Battalion) data collection and include currently required personnel and operational reporting data. Incorporating other studies on personnel and medical surveillance issues augments these efforts by providing a denominator and background picture of the operational environment generating these observations. This information will be collected at the lowest possible operational level and at each successive level through the command chain.

Goals and Objectives

The goals and objectives of this project are as follows:

i/ Develop an efficient database utilizing current technologies which has utility with the medical, personnel and planning communities and to develop the components of a data collection system which can be incorporated into future operations.

ii/ To develop a robust data collection instrument able to interface with a wide range of other instruments in theater and to transmit that data to a central database.

iii/ To identify and link with other databases within this operation e.g. PAS, PARRTS and the serum archive pre and post deployment registry.

iv/ To capture perishable data on force attrition: alpha numeric, voice, and visual, for units or events of Task Force Eagle in sufficient depth to be able to define the tactical environment and contributing factors.

v/ To define those factors which lead to attrition of manpower from the Force together with their relative importance and operational, morale and environmental correlates on a unit or event basis.

vi/ To have the capability to respond to significant incidents of medical interest or loss of manpower and to study them in detail.

vii/ To collate and store sufficient unit and individual loss information to support an evidence based response to be formulated in the event of future attrition and medical inquiries or epidemiological investigations.

viii/ To collect data or administer investigations for other studies participating in the joint data collection umbrella.

The study will aim to undertake sufficient data collection to enable scientifically reliable conclusions to be drawn and no more. Supplementary projects will not be entered into unless there is a realistic chance of achieving scientific relevance except in cases where it is believed that data allowing anecdotal lessons to be learnt would be of value.

The study will aim to remove any additional burden for data collection from deployed operational personnel or medical staff. It will similarly seek to achieve it's aims while presenting as small a footprint in theater as is feasible.

Concept of Operation

The concept of operation of this study is to produce unit-based (company/battalion)descriptive epidemiology, including all sources of attrition whether administrative or medical with valid denominators and appropriate tactical, operational and environmental information. To achieve this we will deploy pairs of dedicated data collectors to a number of major troop locations from Forward Operating Base (FOB) rearward and to link them using the Telemedicine infrastructure to a central data collation facility at USUHS. Data would be collected at each level from the FOB as far as Division / Task Force rear with a similar data collection effort at the support base in Hungary which would permit a degree of comparison between those in and those out of Bosnia.

The data collectors will be mainly civilian employees with recent military experience under contract to the CCRC (to reduce the impact on the force manpower ceiling) and be largely self sufficient. They would work out of the medical treatment facility and be under day to day administrative control of the local military commander. The data collection mission will be administered by a manager located centrally, probably at Tuzla. The civilian status of the data collectors will remove the potential for double tasking once in theater. In addition to training in data collection for the Force Surveillance Project, the data collectors will also receive training in the use

of the Telemedicine evaluation data collection instrument and in the first and second line technical maintenance and repair of the Phase II Telemedicine equipment.

Data collected by the Data Collection Teams (DCTs) will be transmitted through the project's communications channels to a central data base at CCRC. The data will be collated and analyzed by a small team of data analysts supported by a data base manager, a supervisor and a statistician. This effort will be overseen by a Scientific Oversight Committee on which all the major collaborating projects and the University will have representatives. All data collected and all reports returned will be available to the appropriate levels of command and medical / personnel offices and agencies within the Task Force and Theater.

Forward Operating Bases (FOBs)

Battalions will be based at FOBs and will operate daily from those locations. Overnight deployments are not planned. The data collectors would therefore be able to collect specific data sets down to Company level to include daily activity, deployments from the base, any injuries, exposures to known or suspected risks, as well as the daily sick call record. They would follow up on any soldier leaving the line to determine the reasons for his departure (medical, psychological, social or administrative,) their relative importance, length of absence, resource costs associated with the event etc. The data collectors will be under the control of the local commander and have access to the S1 and S3 unit staff "access confirmed during the coordination visit to all levels of theater command" to gather and integrate the information on unit administration and operations with that from the medical side thereby providing the necessary denominator data and tactical context. This information would be transmitted to a central facility at CCRC with a copy to the data collection Team at the next destination of any losses where appropriate. The DCTs will retain a copy of any data transmitted until such time as it receives a receipt from the central database confirming successful integration within the main database. Thereafter they will be transferred onto an external hard drive as a back up. In addition, as the CHCS system is extended into the field, this capability would provide a valuable cross check as to the validity and accuracy of the information from both sources as it passes back up the chain.

Brigade Operating Bases (BOBs), Task force HQ, and Support Base HQ (Hungary)

Data collectors located at the BOBs, Task Force, and Support Base will have similar responsibilities for their own communities but will have an additional collector responsible for tracking and following up casualties or other losses transiting their area. Again, at each level up the chain the data collectors would be under the control of the local commander and would have access to the relevant S1 and S3 data "access confirmed during the coordination visit to all levels of theater command" in support of their data collection effort. Additionally they would be in position to undertake snapshot studies to audit the accuracy of those sources.

Germany

A small team of military data collectors would operate within Germany. Their task would be to follow up on any soldiers leaving Theater to ensure that the trail is complete and that the final outcome is captured. It would achieve through this regular liaison with LARMC. home units and the air heads both personally and electronically. The team would also act as the interface with the EUCOM Surgeon for immediate operational use of the database and USA/EUR Surgeon.

Casualty Care Research Center (CCRC)

At CCRC, data from all locations would be collated and studied for trends, clusters, etc. which, together with Unit based summaries as well as the current database would be transmitted back to the Command or Task Force Surgeon. More detailed study would follow as the database grew and interaction with other databases allowed more conclusions to be drawn. An example would be to collate the activity and sick call data from this study with the psychological morbidity data being undertaken separately. Such studies will allow a greater degree of insight into the dynamics of an operational unit than has ever been possible in the past and having a solid basis in scientific evidence for the first time.

CCRC will have also access to the data bases from the medical facilities in theater. Landstuhl Regional Medical Center, (LARMC) as well as at the various points of embarkation and CONUS. This capability will provide a further cross checking capability to verify the accuracy both of the information and of the other data reporting systems. Furthermore, events of potentially particular operational or medical interest will be identified at the earliest opportunity for focused study. The in-depth data collection and analysis system for this study would augment the operational disease surveillance system. Soldiers from one location or unit who are injured or become ill may be evacuated and diagnosed at different levels along the evacuation chain and therefore an operationally significant pattern may not be readily apparent. For example, widely dispersed injury sustained while lighting heating stoves may not appear as part of routine surveillance. An additional and important role of the unit at CCRC therefore, would be to identify any such event early and notify the Command as soon as it became apparent. Specific Rules of Engagement (ROE) "confirmed during the coordination visit to all levels of theater command" for interaction between local commanders and assigned Data Collection Teams and Rapid Reaction Drills (RRD) for guidance in response to events of interest will be developed for review and approval by local Commanders.

Supplementary Projects

In the event of an incident of significant medical interest, a team will be quickly deployed to the area to institute data collection in depth. The deployment will be authorized by the DCT supervisor in consultation with the local military commander and be undertaken either by the teams local to the incident or the central mobile team where appropriate. Similarly, the mobile team will

be available for special projects through the life of the operation. Examples include specific Telemedicine evaluation projects in partnership with the AMEDD Center and School, identifying medical prescribing habits as the Operation matures, investigations of particular symptoms in the event of a suspected disease threat in a particular area etc. This capability would also enable the capture of data related to unforeseen medical demands such as the treatment of hostile casualties or allied troops or any incidental humanitarian incident which may arise.

Data Collection Mechanism

Data

The database will be constructed from two sources: current standard operational reports and specific surveys completed by dedicated data collectors. Operational reports will be collected at the unit level or entered directly from electronic databases. These will include daily unit strengths, daily operational synopsis, accident reports, weather and accident reports (**Annex A**: Operational Reports Data Sources). In addition the DCTs will capture daily sick call registers and medical surveillance reports for US military personnel as well as for other members of other UN Forces, contractors and civilians who enter the US Task Force structure. Surveys will be completed from available records and, where necessary, by direct interview of subjects or witnesses. The currently proposed datasets (**Annex B**: Force Surveillance Data fields) for the attrition and unit datasets are based on those previously developed by CCRC from experience with the watershed WDMET program (Vietnam Wound Data Munitions Effectiveness Team). Data fields have been added to meet the requirements of other participating studies seeking to utilize the Force Surveillance Project as their source of in Theater data. (**Annex C:** Supplementary Research Data Collection Requirements). Further collaboration with these and other interested groups has been made and the Oracle database was chosen as a result. Consequently a remarkable degree of cooperation regarding content and interoperability between databases has been achieved. The latest updated list of the collaborating projects is shown at **Annex D**. Data collection may be modified after experience in theater or as operational circumstances change. Tiered datasets have been constructed which ensure that identical baseline information is sought from similar presentations but the effort quickly focuses on the current situation. (For example, individual and unit demographics will be collected from all subjects but disease information Data fields will not appear in the menus for injury). A unique feature of the Force Surveillance database is the ability to insert additional questionnaires electronically during the course of the Project in response to changing conditions or evolving situations of concern to the medical or other commanders on the ground.

Technology

The project will be undertaken using off the shelf technology tailored to the task and with the emphasis on simplicity and ruggedness. A fully integrated list of equipment is given at **Annex E** (and includes equipment required and funded by Operation Primetime III). This technology will be fully integrated with the needs of the data base developers and the Primetime III Task Force and

has been collated with their active input. Information will be gathered using IBM Thinkpad computers into algorithm type data collection menus. The rapid conversion of the developed datasets into deployable software has been possible through the modification of electronic medical record generation technology developed jointly by ARPA and Oracle through the Trauma Care Information Management Systems Project (TCIMS Project.) The leveraging of current advanced technology for medical data entry has made the proposed time lines achievable and provides application and field testing for the technology development in these projects. Data collection computers will have interface with the Telemedicine equipment due to be installed at each location as well as with the hardware indigenous to the units. Information will be transmitted along the dedicated bandwidth set aside for the Telemedicine support whilst maintaining the capability of producing a disk copy as a backup method if necessary.

Data Collectors

Dedicated data collectors are required in order to ensure data is collected even during periods of operational activity. The assistance of operational personnel with disease surveillance, data collection, and reporting missions is essential for complete information. However, they can not reliably provide the additional data required for complete Force Surveillance. The consistent experience of data collection efforts is that mission requirements during periods of operational activity supersede reporting requirements without immediate operational impact. These periods of operational activity may be expected to be of the most interest to the study.

Operational requirements for Joint Endeavor include a military personnel ceiling within Theater which makes contract data collectors desirable. Some specifically selected military personnel are essential for administration and logistic support, unit acceptance, and Command liaison. A mix of military and civilian personnel allows the project to balance the competing issues of mission requirements, military personnel availability, force limits, and cost. Personnel must fulfill certain basic requirements before specific training as data collectors within this operation. Several hiring mechanisms are available for civilian personnel with various lead times, relative costs, and personnel status. It is likely that the data collectors will be employed either as Henry M Jackson Foundation employees or contractors. (**Annex F**: Civilian Personnel Hiring Mechanisms and Draft Position Descriptions). However, all personnel options require that individuals be present for at least 30 days prior to deployment.

Scientific Validity:

A descriptive data base invokes different criteria for validity than a study limited to answering a specific question or hypothesis. Sufficient events and information must be obtainable to address the specific issues identified for study. However, the data base must also be complete enough to allow further inquiry. The descriptive database itself becomes a laboratory to address future specific questions. The few such databases in military operations have had far reaching consequences. The retrospective Korean Conflict data analysis "Battle Casualties and

MedicalStatistics - The Army Experience in the Korean War" emphasized the need for prospective data collection and the requirements for information beyond routine operational reporting requirements and medical records. The Vietnam WDMET study demonstrated the potential of a prospective descriptive database in addressing issues not explicitly identified during the project development and conduct. The proposed Force Surveillance Project incorporates all of the features of these past studies with already proven scientific validity and operational impact. The proposed study also addresses the major scientific flaw in past descriptive databases and other limited issue specific studies by providing a basis for establishing the true total population (denominator) of these studies.

The data to be collected will satisfy the requirement of the military Personnel community in identifying the sources of attrition during the Joint Endeavor deployment. The study will also provide an answer to the hypothesis that a useful force wide data collection effort can be conducted during a military deployment. The database has also already been identified as the source for the data requirements for the research and validation studies of four major independent studies:

- technology cost effectiveness studies by Grumman Corporation
- clinical outcome comparison studies by Vector Corporation
- Telemedicine operational impacts by the AMEDD Test Board
- Telemedicine evaluation Program by the US Army Medical Research and Materiel Command.

Each of these approved studies has contributed to the design of the data collection effort and the specific information and Data fields to be collected. In each case, the absence of the Force Surveillance Project would require these studies to undertake their own topic specific data collection effort. (**Annex G**: Synopsis of Collaborating Projects & **Annex H**: Supported Studies Project Design Concurrence and Data Requirements)

The Force Surveillance study design has been submitted for peer review by scholars within the field for scientific approach and potential value of resulting database. Communications from these centers indicate strong support for the validity of a descriptive database for either the entire force or any unit based slice of the deployed force. (**Annex I**: Peer Review of Force Surveillance Project Design) Principle investigators of other already approved specific studies are satisfied that the data collected will provide the information required for their analyses. The scientific sufficiency of the study if accomplished as designed has been established for specific issues and as a descriptive database for future inquires and planning.

Human Subjects

Human use issues in data collection surveys of this nature are limited to the potential stress of interview and the very low risk of communicating confidential patient information outside the study. The data collection is designed not to lead to any alteration of the actions of individuals or subjects. The study will not cause or encourage any additional procedures. The vast majority of information will be obtained through access to perishable information already gathered within the

operational and medical system. Observations made by the data collectors and images of the environment or situation will not directly involve subjects. Limited additional. but vital information will be obtained by interview of the subject and/or witnesses. Permission from subjects will be sought for any direct audio or visual records.

The very low risk of unintentional release of confidential patient information is addressed through the data security procedures outlined. As much as possible. individual identifiers will be removed from data within the database used for any analysis. The Casualty Care Research Center has accumulated considerable experience in the control of such data and privacy issues though its role as custodian of the WDMET files. Although used extensively for research and teaching and through several intense individual inquiries. there have been no reported instances of breach of confidentiality of these 8,000 records.

The risk of mental stress of interviews will be minimized. Experienced psychiatric consultation has been sought in designing survey questions and interview techniques for data collectors. Studies limited to records review and surveillance have not involved consent from subjects. Interviews with subjects or witnesses will be requested with a clear statement that participation in the survey is not required and a response to any particular question may be omitted. Authorization will be requested for audio or visual recording of a subject or witness. (**Annex J**: Human Use Issues)

There are potential benefits to the individuals involved in the study. Identification of risks would allow the alteration of activities or locations to reduce further exposure. All personnel in Theater are potentially at risk for deployment syndromes such as those encountered in Vietnam and Desert Storm. Epidemiologic study could reveal causes of later manifestations and lead to more directed and effective treatment and evaluation. Monitoring and analysis of Telemedicine implementation is expected to result in modifications to this clinical problem solving modality. Telemedicine capability is anticipated to provide increased level of care and access to specialty care at the forward locations of patients. Improvements in Telemedicine practice are expected to further supplement the patient care capability within the deployment. Future benefits of the study would include improved deployment planning capability and knowledge allowing for the reduction of sources of attrition. Subjects contacted for survey for data collection and all other personnel in Theater can be expected to benefit directly from decreased risk due to heightened surveillance and improvements in the medical care delivery system. Subjects particularly may benefit from the preservation of perishable data relating to their loss from duty.

As the source of the studies principle investigators and project management as well as the repository of the resulting archive and database. the USUHS will be the primary institutional review for this project. This study design has been submitted for Human Use Review within USUHS and the US Army Medical Research and Materiel Command and has been modified to address any concerns.

Data Security

The nature and mechanisms of collection of the information and the uses of the database make identification of the subjects unavoidable. Individual data collected must be identifiable in order to integrate data elements on the same individual gathered at various locations and echelons as well as to incorporate other information sources within the operation and personnel system. Individual identification will also be necessary to allow cross checking of data base completeness. Future use of the descriptive data base for investigations or epidemiologic studies of cohorts will also require linking current individual cases to events within the study. Audio and visual records may allow individuals to be recognized retrospectively even without specific identifiers. Since individuals will be identifiable, security and confidentiality of the data must be maintained.

The security of the individual data will be maintained during collection, archiving, and access for use or analysis. Data collectors will maintain physical security of their notebook computers and any audio or visual records. In addition the capability exists to encrypt data immediately and for storage utilizing the recently available PGP encryption technology available from ViaCrypt corporation. (This encryption system utilizes 2 independent keys. Security of the coded information is considered so high that the US government objected to its public availability.) Return of physical data storage materials such as tapes or disks will be by courier of registered and sealed pouches. Operational information and routine reports and surveillance data will be subject to the same degree of security as individual data once it has left the Theater.

Original data will be stored in a secure archive at the USUHS. The individual identifiers, name and service number, will be encoded at the time of entry into the master database. The archive will attempt to provide optimal conditions for the long term preservation of the original records similar to the controls for the Vietnam WDMET data currently stored. Data will be retrievable through a selectively searched computer database.

Access to the database for investigations and research analysis will follow guidelines such as those established for theWDMET data in USUHS Instruction XX. (attached as **Annex J,K**). Access will be granted for data requirements of appropriately DOD approved projects. Access will be limited to those data elements necessary to accomplish the specified project. Investigators must agree to comply with requirements for further access or dissemination of data and assume the legal requirements for data security. Separate higher controls will be required for access to unencoded individual identifiers. Reports and publications will be stripped of all individual identifies.

Proposed Modified Project

The modified project completes the development of the data collection instrument, and the open architecture interrelational database. Data collection in Bosnia will be conducted by 5 static and 1 mobile Data Collection Team (DCT's) of 2 persons each who will collect data prospectively and retrospectively at their assigned sites. Including the supervisory elements a total of 14 individuals will deploy. Data will be transmitted to the CCRC for entry into the database, collation,

analysis, and return report to the theater. The DCT's will cover 50% of the force in Bosnia and will remain with them until redeployment to Germany is completed in 1997. The multi-level nature of data gathering will be retained with coverage of both the support bases in Hungary and Germany.

In addition, other data bases (PAS, PARRTS) and other information sources (Pre and Post Deployment Serum Archives, DNBI Surveillance, Post Deployment Screening) will be linked to the Force Surveillance Database. A limited number of supplementary projects will be considered for the DCT's. At the end of the project recommendations and implementation plans for data gathering using the project procedures, software, and data base in an operational or research mode will be provided in anticipation of the next major deployment of U.S. forces. This presumes active participation in post-Bosnia lessons learned meetings and reviews and substantive discussions with agencies, organizations and offices with a personnel data collection interest or responsibility (CHPPM, Unified Commands-Surgeons and J-1, etc.)

There is a risk that this modified project will not achieve its full potential. This can be greatly reduced if a decision is made with some dispatch which will enable data collection teams to be established in theater by mid-July 1996. To achieve this, recruitment must begin no later than 24 May 1996.

*A detailed plan is given in **Annex L**. This plan involves 5 static and 1 mobile DCT and to undertake a full Force Surveillance Project but covering about half the Force. Including the Supervisory element this will mean the deployment of a total of 14 individuals.

*The scientific and military value of this plan is enormous and fully satisfies the needs of all the collaborating projects producing collateral benefits to projects valued at over $3.26M. A wide range of studies should be enabled by the data produced, together with many supplementary projects and the option will be of considerable utility to the commanders on the ground.

Ownership of Information

Concerns have been raised amongst the theater commanders of information leaving theater and therefore their control without approval through the proper chain of command. USUHS would therefore propose that any data gathered would remain the operational property of EUCOM but would become the intellectual property of USUHS. No information would be released by USUHS other than directly back to the Task Force or Command Surgeons. No data analysis related to scientific publication would be commenced until the Operation had been completed unless expressly approved by the Command. Thereafter scientific or other publication of the data or study conclusions would be undertaken within the requirements of the University and the Department of Defense.

Impact and Applications

This data collection project will be unique in that it looks at a military force and the attrition from it through it's operational components. It will achieve this through a marriage between the need for militarily relevant epidemiology and the need to develop the information transfer system for the electronic patient record. This project will develop and field test a data collection instrument which is robust and permits input from multiple sources. Furthermore it will prove that the data is reliably transferrable to a central database designed with an open architecture and that database will be inter-relational with other major databases.

The Project will serve as the model for operational deployable data collection teams in the future. It will additionally show that dedicated data collectors, with proper training and preparation can be leveraged for other tasks. The presence of the data collectors as first and second line technical support for phase II of Operation Primetime III will impact considerably on that project both by providing the infrastructure for technical sustainment and by reducing the need for duplication of equipment, a real money saving of $370K.

ARPA will benefit from this project by the development and field testing of data collection instrument. Their $1.5M investment in the database development is an indication of the importance of this project to them as it goes most of the way towards making the electronic patient record a reality. In addition , the project provides the infrastructure to field-test prototypes of other ARPA projects which are likely to become suitable or testing during the life of the project. Meditag and the 3D ultrasound are examples.

ForSurv will also provide contextual data support for a number of other projects (Annex G) particularly by providing denominator, operational, administrative or environmental data for them which would otherwise be unavailable to them. This is particularly so of the Telemedicine Evaluation Project in which ForSurv is essential to all 3 efforts (AMEDD Center and School, Vector Research and Northrup Grumman) which will fall considerably short of their full potential without denominator data and without DCTs at each T-Med site.

ForSurv will quantify the interaction between physical, psychological, social, and administrative factors and directly relate them to a unit, it's tactical situation and environment, and activity. Studies included in the umbrella data collection effort will have base line data (denominators) which would be necessary to extend conclusions to the rest of the force or in later operations. Consequently, the data and analysis generated should provide the basis for prediction of attrition in similar operations other than war. In addition to permitting a more scientific basis for the deployment of resources in future operations it may also provide a proportion of the data base required for the investigation of any future as yet unsuspected epidemiological problem.

Finally, as a byproduct it will provide Force Commanders with an additional rapid and valuable source of information to enable them to react quickly to reduce force morbidity and attrition to a minimum.

Annex O:

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FORCE SURVEILLANCE
MAIN MENU

1. Enter NEW name
2. Access DEMOGRAPHIC database
3. Enter SICK CALL REGISTER encounter
4. Enter NEW PRIMARY HEALTH CARE attrition event
   - window opens asking what type of attrition event
5. Enter NEW TERTIARY HEALTH CARE attrition event
   - window opens asking what type of attrition event
6. Edit DAILY MEDICAL ENCOUNTER
   -daily data fields are created and kept open, keying off of discharge date, and closed when discharge date is entered.
7. Edit existing encounter (limitations to be decided)
8. Enter DAILY UNIT ADMINISTRATIVE data

The database should be set up so that demographic and patient information datafields are set up to relate to the following individual databases. The MAIN MENU will have to allow for adding other attrition events, which more than one may effect a single soldier, or there may be a change in the status of the cause of attrition with time.

DATE FIELD IS KEYED TO DATABASE (can be set up so it is automatically entered with new encounter), CROSS-REFERENCED WITH FIRST NAME, LAST NAME AND SSN.

Relational Databases

a. DEMOGRAPHIC

b. SICK CALL REGISTER

c. MEDICAL ATTRITION, PRIMARY FOLLOW-UP
   - DISEASE
   - NONBATTLE INJURY
   - PSYCHIATRIC
   - BATTLE INJURY
   - DENTAL

d. MEDICAL ATTRITION, TERTIARY FOLLOW-UP
   - DISEASE
   - NONBATTLE INJURY
   - PSYCHIATRIC
   - BATTLE INJURY
   - DENTAL

e. ADMINISTRATIVE ATTRITION

f. UNIT ADMINISTRATIVE DATA (programmed to automatically enter unit data with each encounter)

g. TELEMEDICINE

ATTRITION TREE

Loss of troop for greater than 24 hours. TOUCH SCREENS WILL ACTIVATE INDIVIDUAL DATA FIELDS, DEFINED BY THE BRANCHES OF THE TREE

1. MEDICAL
    a. DISEASE
    b. NONBATTLE INJURY
    c. PSYCHIATRIC
    d. BATTLE INJURY
    e. DENTAL

2. ADMINISTRATIVE
    a. COMPASSIONATE
    b. DISCIPLINARY
    c. R & R
    d. PERSONNEL ACTION

INDIVIDUAL DEMOGRAPHICS

Information obtained from Unit and Personnel Status Report
COMPLETED ON EACH MEMBER

a. FOB
b. BOB
c. TUZLA
d. HUNGARY

Name:

SSN:

UNIT/COMPANY:

BRANCH/SERVICE
a. USA
b. OTHER
- USAF
- USMC
- USN
- CIVILIAN
- GOVERNMENT
- USPH

MOS/AFSC:

AGE: (Numeric)

GENDER:
a. MALE
b. FEMALE

MARITAL STATUS:
a. MARRIED
b. SINGLE
c. DIVORCED
d. SEPARATED

ETHNICITY:
a. CAUCASIAN
b. AFRICAN-AMERICAN
c. ASIAN
d. HISPANIC
e. OTHER:

TIME IN COUNTRY:
a. < 1 Month
b. 1-3 Months
c. 3-6 Months
d. 6-12 Months
e. > 12 Months

Height: (Numeric)
Weight: current: (Numeric) year age: (WHAT DOES THIS MEAN?)

PAST MEDICAL HISTORY (DEPLOYMENT RECORDS):

a. DIAGNOSIS 1 (TEXT FIELD)
b. DIAGNOSIS 2 (TEXT FIELD)
d. DIAGNOSIS 3 (TEXT FIELD)
e. DIAGNOSIS 4 (TEXT FIELD)
f. DIAGNOSIS 5 (TEXT FIELD)

PHYSICAL FITNESS SCORE:

1. DATE FIELD (LAST PT TEST)
2. PFT (ARMY OR NAVY):
3. BICYCLE ERGOMETER:
4. RUN/WALK:

TOBACCO

- NO
- YES--------

1. CIGARETTES
   i. 1-10 CIG/DAY
   ii. 11-20 CIG/DAY
   iii. 21-40 CIGS/DAY
   iv. 41-60 CIGS/DAY

2. SMOKELESS TOBACCO
   i. 1-5 TIMES/DAY
   ii. 6-12 TIMES/DAY
   iii. >12 TIMES/DAY

3. OTHER (CIGARS AND/OR PIPE)

SHOULD WE LOOK AT THIS? DOES THIS MAKE SCIENTIFIC SENSE?

PHYSICAL ACTIVITY:

‡CURRENT ‡1 YEAR AGO (WHAT DOES THIS MEAN?)

AEROBIC ACTIVITY

‡< 1 HOUR PER WEEK
‡1-3 HOURS PER WEEK
‡4-6 HOURS PER WEEK
‡> 6 HOURS PER WEEK

INTENSITY:

‡MILD (LOW INTENSITY GOLF, SLOW WALK, GARDENING)
‡MODERATE (JOG 10 MIN/MILE, SLOW SWIM)
‡INTENSITY (RUNNING, HARD SWIM)

ANAEROBIC:

‡WEIGHT LIFTING

SICK CALL REGISTER

The sick call register is the gateway to MEDICAL ATTRITION TREE. This will be our clinical monitors, which may not actually result in true attrition.

HEALTH CARE PROVIDER
- a. MEDIC
- b. PA
- c. NURSE PRACTITIONER
- d. GMO
- e. FAMILY PRACTICE
- f. INTERNAL MEDICINE
- g. SURGERY

SICK CALL VISIT
- a. FIRST VISIT (SINGLE DATA POINT FOR VISIT)
- b. REPEAT VISIT: NUMERICAL VALUE

DIAGNOSIS
- a. TEXT FIELD

TREATMENT
- a. TEXT FIELD

ATTRITION EVENT?
- -YES *(AUTOMATICALLY OPENS ATTRITION FIELDS, TELEMEDICINE IS ADDRESSED IN EACH OF THE FOLLOWING CATEGORIES)*
  1. DISEASE
  2. NONBATTLE INJURY
  3. PSYCHIATRIC
  4. BATTLE INJURY
  5. DENTAL
- -NO
  1. TELEMEDICINE EVENT?
     - -YES *(AUTOMATICALLY OPENS TELEMEDICINE FIELDS)*
     - -NO

MEDICAL ATTRITION, PRIMARY CARE - DISEASE

LOSS TO FULL DUTIES OF GREATER THAN 24 HOURS.
- IF INFORMATION IS OBTAINED FROM RECORDS CONTINUE
- IF INFORMATION IS OBTAINED FROM PATIENT
  INFORMED CONSENT GIVEN
  - NO (DO NOT PROCEED)
  - YES (CONSENT IN CHART AND WITH PATIENT)

REFERRING UNIT DIAGNOSIS: *(TEXT, DIAGNOSIS CONFIRMED AT TERTIARY CARE LEVEL)*

TREATMENT
(TEXT FIELD)
(TEXT FIELD)
(TEXT FIELD)

WHAT WAS THE DISPOSITION OF THE PATIENT?

a. WAS THE PATIENT PLACED ON RESTRICTED DUTIES?
   (ACTIVE DAILY DATA ENTRY)
b. WAS THE PATIENT BEDDED DOWN AT PRIMARY CARE LEVEL?
   (ACTIVE DAILY DATA ENTRY)
c. WAS THE PATIENT EVACUTED?
   - YES
     1. WHAT WAS THE STATUS OF THE EVACUATION?
        i. ROUTINE
        ii. EMERGENCY

     2. EVACUATION SITE?
        i. MASH
        ii. CSH
        iii. OTHER

     3. MODE OF TRANSPORT?
        i. AIR
        ii. AMBULENCE
        iii. OTHER ROAD VEHICLE

     4. NON US TRANSPORT (SPECIFY - TEXT)

     5. SOLE USE OF TRANSPORT?
        - YES
        - NO

     6. MEDICAL ESCORTS
        i. PHYSICIAN/PA
        ii. MEDIC
        iii. NONE

7. REASON FOR EVACUATION?
    i. UNSURE OF DIAGNOSIS
    ii. REQUIRES TERTIARY CARE
        1. Outpatient care only?
        2. Inpatient care?
        3. LACK OF THERAPEUTIC AGENTS
            SPECIFY (Text)
8. OTHER (TEXT FIELD)

-NO

DO YOU THINK THERE WAS A PSYCHOLOGICAL COMPONENT PROMOTING THE EVACUATION OF THIS PATIENT (scored from 0-10, 0 being nonexistent, 10 being very high)? Numeric Field

TELEMEDICINE

WAS TELEMEDICINE AVAILABLE FROM THE LEVEL 1 FACILITY?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
    WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION
    - YES (OPENS TELEMEDICINE FIELDS)
    - NO

DID EQUIPMENT OR OTHER FAILURE LEAD TO TELEMEDICINE NOT BEING USED
- YES (OPENS TELEMEDICINE FIELDS)
- NO

COMMENTS? (Text Fields)

SUBSTANCE ABUSE *(DO WE NEED THIS?)*

a. *TRIGGER DR. MANNUS QUESTIONNAIRE FROM FT BENNING*
b. *ETOH*
c. *OTHER SUBSTANCE*

MEDICAL ATTRITION, PRIMARY CARE - NONBATTLE INJURY

LOSS OF GREATER THAN 24 HRS TO THE UNIT (INCLUDES BEDDING DOWN AND LIGHT DUTIES)

IF INFORMATION IS OBTAINED FROM THE RECORDS CONTINUE
IF INFORMATION IS OBTAINED FROM THE PATIENT: OBTAIN AND CHART INFORMED CONSENT

CLINICAL

REFERRING UNIT DIAGNOSIS: (TEXT FIELD, DIAGNOSIS CONFIRMED AT TERTIARY CARE LEVEL)

(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)

TREATMENT PRIOR TO EVACUATION

(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)

WAS THE INJURY CAUSED AS A RESULT OF:

a. MILITARY DUTIES
b. MOTOR VEHICLE ACCIDENT
c. SPORTING ACTIVITY
d. OTHER (Text)

WHAT WAS THE DISPOSITION OF THE PATIENT?

a. WAS THE PATIENT PLACED ON RESTRICTED DUTIES?
   (ACTIVE DAILY DATA ENTRY)
b. WAS THE PATIENT BEDDED DOWN AT PRIMARY CARE LEVEL?
   (ACTIVE DAILY DATA ENTRY)
c. WAS THE PATIENT EVACUTED?
   - YES
      1. WHAT WAS THE STATUS OF THE EVACUATION?
         i. ROUTINE
         ii. EMERGENCY

      2. EVACUATION SITE?
         i. MASH
         ii. CSH
         iii. OTHER

      3. MODE OF TRANSPORT?
         i. AIR
         ii. AMBULENCE
         iii. OTHER ROAD VEHICLE

      4. NON US TRANSPORT (SPECIFY - TEXT)

5. SOLE USE OF TRANSPORT?
   - YES
   - NO

6. MEDICAL ESCORTS
   i. PHYSICIAN/PA
   ii. MEDIC
   iii. NONE

7. REASON FOR EVACUATION?
   i. UNSURE OF DIAGNOSIS
   ii. REQUIRES TERTIARY CARE
      1. Outpatient care only?
      2. Inpatient care?
      3. LACK OF THERAPEUTIC AGENTS
         SPECIFY (Text)
8. OTHER (TEXT FIELD)

-NO

TELEMEDICINE

WAS TELEMEDICINE AVAILABLE FROM THE LEVEL 1 FACILITY?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
  WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION
  - YES (OPENS TELEMEDICINE FIELDS)
  - NO

DID EQUIPMENT OR OTHER FAILURE LEAD TO TELEMEDICINE NOT BEING USED
- YES (OPENS TELEMEDICINE FIELDS)
- NO

COMMENTS (Text Field)

MEDICAL ATTRITION, PRIMARY CARE - PSYCHIATRIC

LOSS OF GREATER THAN 24 HRS TO THE UNIT (INCLUDES BEDDING DOWN AND LIGHT DUTIES)

IF INFORMATION IS OBTAINED FROM THE RECORDS CONTINUE
IF INFORMATION IS OBTAINED FROM THE PATIENT: OBTAIN AND CHART INFORMED CONSENT

CLINICAL

REFERRING UNIT DIAGNOSIS: (TEXT FIELD, DIAGNOSIS CONFIRMED AT TERTIARY CARE LEVEL)
(TEXT FIELD 1)

TREATMENT PRIOR TO EVACUATION
(TEXT FIELD 1)
(TEXT FIELD 2)

PREVIOUS HISTORY OF PSYCHIATRIC / PSYCHOLOGICAL ILLNESS
- YES
  a. SPECIFY WITH DATES
     (TEXT FIELD 1)
     (TEXT FIELD 2)
- No

WAS EXPERT PSYCHIATRIC ADVISE SOUGHT
- YES
  a. WAS THE PATIENT MANAGED BY VISITING PSYCHIATRIC TEAM
     - YES
     - NO
  b. WAS THE PATIENT MANAGED BY TELEMEDICINE
     - YES
       OPENS TELEMEDICINE DATABASE
     - NO
- NO

WAS THE PATIENT PUT ON RESTRICTED DUTIES?
- YES
  HOW MANY DAYS
- NO

WAS THE PATIENT BEDDED DOWN AT BOB OR FOB LEVEL?
- YES
  (TRIGGERS DAILY ENTRY UNTIL DISCHARGED)
- NO

WHAT WAS THE DISPOSITION OF THE PATIENT?
a. WAS THE PATIENT PLACED ON RESTRICTED DUTIES?
   (ACTIVE DAILY DATA ENTRY)
b. WAS THE PATIENT BEDDED DOWN AT PRIMARY CARE LEVEL?
   (ACTIVE DAILY DATA ENTRY)

c. WAS THE PATIENT EVACUTED?
- YES
    1. WHAT WAS THE STATUS OF THE EVACUATION?
        i. ROUTINE
        ii. EMERGENCY

    2. EVACUATION SITE?
        i. MASH
        ii. CSH
        iii. OTHER

    3. MODE OF TRANSPORT?
        i. AIR
        ii. AMBULENCE
        iii. OTHER ROAD VEHICLE

    4. NON US TRANSPORT (SPECIFY - TEXT)

    5. SOLE USE OF TRANSPORT?
        - YES
        - NO

    6. MEDICAL ESCORTS
        i. PHYSICIAN/PA
        ii. MEDIC
        iii. NONE

    7. REASON FOR EVACUATION?
        i. UNSURE OF DIAGNOSIS
        ii. REQUIRES TERTIARY CARE
            1. Outpatient care only?
            2. Inpatient care?
            3. LACK OF THERAPEUTIC AGENTS
                SPECIFY (Text)
    8. OTHER (TEXT FIELD)

-NO

TELEMEDICINE

WAS TELEMEDICINE AVAILABLE FROM THE LEVEL 1 FACILITY?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
    WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION
    - YES (OPENS TELEMEDICINE FIELDS)
    - NO

DID EQUIPMENT OR OTHER FAILURE LEAD TO TELEMEDICINE NOT BEING USED
- YES (OPENS TELEMEDICINE FIELDS)
- NO

COMMENTS (Text Field)

TO WHAT EXTENT WERE SOCIAL FACTORS OPERATING IN THIS CASE
(SCALE OF 1 TO 10)

MEDICAL ATTRITION, PRIMARY CARE - BATTLE INJURY

LOSS OF GREATER THAN 24 HRS TO THE UNIT (INCLUDES BEDDING DOWN AND LIGHT DUTIES)

IF INFORMATION IS OBTAINED FROM THE RECORDS CONTINUE
IF INFORMATION IS OBTAINED FROM THE PATIENT: OBTAIN AND CHART INFORMED CONSENT

CLINICAL

REFERRING UNIT DIAGNOSIS: (TEXT FIELD, DIAGNOSIS CONFIRMED AT TERTIARY CARE LEVEL)

(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

CARE IN THE FIELD

TIME OF INCIDENT
(NUMERIC FIELD)

LOCATION OF INCIDENT
(NUMERIC FIELD - GPS)

INITIAL CARE PROVIDED BY (Set up to be able to identify more than one)

a. BUDDY
b. MEDIC
c. PA
d. PHYSICIAN

WAS MEDICAL TEAM CALLED TO THE SCENE?

- YES
  - MAKEUP
    - (TEXT FIELD 1)
    - (TEXT FIELD 2)
    - (TEXT FIELD 3)
    - (TEXT FIELD 4)
    - (TEXT FIELD 5)
  - TIME ARRIVED
    - (NUMERIC FIELD)
- NO

CARE GIVEN AT SCENE

(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

EQUIPMENT OR THERAPEUTIC AGENTS REQUIRED BUT NOT AVAILABLE
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

WAS FIELD INTERVENTION LIFE SAVING?
- YES (TRIGGERS FOLLOW UP VTC)
- NO

WAS IV INFUSION STARTED FORWARD OF THE MTF?
- YES
    1. TIME STARTED (NUMERIC FIELD)
    2. TOTAL VOLUME INFUSED TO MTF (NUMERIC FIELD IN ccs)
    3. DID IV DELAY EVACUATION?
        - YES
            HOW LONG (NUMERIC FIELD - MINS)
        - NO
- NO

INITIAL EVACUATION TO:
a. FOB
b. BOB
c. MASH
d. CSH
e. OTHER
    SPECIFY (TEXT FIELD)

MODE OF TRANSPORT
a. AIR
b. AMBULANCE
c. OTHER ROAD VEHICLE
d. NON US TRANSPORT
    SPECIFY (TEXT FIELD)

TRANSPORT DIVERTED FROM OTHER DUTIES
- YES
    SPECIFY (TEXT FIELD)
- NO

MILITARY ESCORT
- YES
    SIZE (Numeric)
- NO

MEDICAL ESCORTS?
a. PHYSICIAN/PA
b. MEDIC

TIME REACHED FIRST MTF
(NUMERIC FIELD)

TREATMENT AT FOB PRIOR TO EVACUATION (IF APPROPRIATE)
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

WAS THE PATIENT RETURNED TO DUTY FROM THE FOB
- YES
- NO

WAS THE PATIENT PUT ON RESTRICTED DUTIES
- YES
HOW MANY DAYS?
- NO

WAS THE PATIENT BEDDED DOWN AT FOB
- YES
- NO

ONWARD EVACUATION

WAS THE PATIENT EVACUATED ON A ROUTINE BASIS?
- YES
- NO

WAS THE PATIENT EVACUATED AS AN EMERGENCY?
- YES
TIME LEFT FOB (NUMERIC FIELD)
- NO

EVACUATION SITE?
a. BOB
b. MASH
c. CSH
d. OTHER

MODE OF TRANSPORT
a. AIR
b. AMBULANCE
c. OTHER ROAD VEHICLE
d. NON US TRANSPORT (SPECIFY - TEXT)

SOLE USE OF TRANSPORT
- YES
- NO

MILITARY ESCORT
- YES
SIZE (Numeric)
- NO

MEDICAL ESCORT
- a. PHYSICIAN/PA
- b. MEDIC

REASON FOR EVACUATION?

- a. UNSURE OF DIAGNOSIS?
- b. REQUIRES X-RAY ONLY?
- c. REQUIRES TERTIARY CARE
  1. Outpatient care only?
  2. Inpatient care only?
  3. LACK OF THERAPEUTIC AGENTS
     SPECIFY (Text)
- d. OTHER (Text Field)

TELEMEDICINE

WAS TELEMEDICINE USED FOR THIS PATIENT
- YES
  ACCESS TO TELEMEDICINE DATABASE
- NO

TACTICAL SCENARIO AND CAUSATIVE AGENTS

THIS DATA BASE PROVIDES THE BASIC INFORMATION FOR A MORE DETAILED INVESTIGATION RUN AS A SUPPLEMENTARY PROJECT FROM THE RECORD. THIS WOULD BE DIRECTED FROM CCRC BY VTC AND CONDUCTED BY THE DATA COLLECTORS ON THE GROUND.

INCIDENTS ARE TOO RARE AND VARIABLES TOO MANY FOR A STANDARD DATA BASE TO BE FEASIBLE.

MEDICAL ATTRITION, PRIMARY CARE - DENTAL

LOSS OF GREATER THAN 24 HRS TO THE UNIT (INCLUDES BEDDING DOWN AND LIGHT DUTIES)

IF INFORMATION IS OBTAINED FROM THE RECORDS CONTINUE
IF INFORMATION IS OBTAINED FROM THE PATIENT: OBTAIN AND CHART INFORMED CONSENT

CLINICAL

REFERRING UNIT DIAGNOSIS: (TEXT FIELD, DIAGNOSIS CONFIRMED AT TERTIARY CARE LEVEL)

(TEXT FIELD 1)
(TEXT FIELD 2)

TREATMENT PRIOR TO EVACUATION

(TEXT FIELD 1)
(TEXT FIELD 2)

WAS THE PATIENT PUT ON RESTRICTED DUTIES?

- YES
  - HOW MANY DAYS
- NO

WAS THE PATIENT BEDDED DOWN AT BOB OR FOB LEVEL?

- YES
  - (ACTIVATES DAILY DATA ENTRY UNTIL DISCHARGED)
- NO

WHAT WAS THE DISPOSITION OF THE PATIENT?

a. WAS THE PATIENT PLACED ON RESTRICTED DUTIES?
   (ACTIVE DAILY DATA ENTRY)
b. WAS THE PATIENT BEDDED DOWN AT PRIMARY CARE LEVEL?
   (ACTIVE DAILY DATA ENTRY)
c. WAS THE PATIENT EVACUTED?
   - YES
     1. WHAT WAS THE STATUS OF THE EVACUATION?
        i. ROUTINE
        ii. EMERGENCY

     2. EVACUATION SITE?
        i. MASH
        ii. CSH
        iii. OTHER

     3. MODE OF TRANSPORT?
        i. AIR
        ii. AMBULENCE
        iii. OTHER ROAD VEHICLE

     4. NON US TRANSPORT (SPECIFY - TEXT)

5. SOLE USE OF TRANSPORT?
   - YES
   - NO

6. MEDICAL ESCORTS
   i. PHYSICIAN/PA
   ii. MEDIC
   iii. NONE

7. REASON FOR EVACUATION?
   i. UNSURE OF DIAGNOSIS
   ii. REQUIRES TERTIARY CARE
      1. Outpatient care only?
      2. Inpatient care?
      3. LACK OF THERAPEUTIC AGENTS
         SPECIFY (Text)
8. OTHER (TEXT FIELD)

-NO

TELEMEDICINE

WAS TELEMEDICINE AVAILABLE FROM THE LEVEL 1 FACILITY?
- YES (OPENS TELEMEDICINE FIELDS)
- NO

WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION
- YES (OPENS TELEMEDICINE FIELDS)
- NO

DID EQUIPMENT OR OTHER FAILURE LEAD TO TELEMEDICINE NOT BEING USED
- YES (OPENS TELEMEDICINE FIELDS)
- NO

COMMENTS (Text Field)

TERTIARY - MEDICAL ATTRITION: DISEASE

LOSS OF GREATER THAN 24 HOURS FROM THE UNIT
IF INFORMATION IS OBTAINED FROM RECORDS CONTINUE
IF INFORMATION IS OBTAINED FROM PATIENT
INFORMED CONSENT GIVEN
NO DO NOT PROCEED
YES CONSENT IN CHART AND WITH PATIENT

EVACUATION SITE IDENTIFICATION (PROGRAM AUTOMATIC, DATABASE NAME?)

CHANGE IN STATUS?
-YES
ON TO THE NEXT
-NO

ADMISSION DATE: (DATE FIELD)

DO YOU AGREE WITH THE REFERRING DIAGNOSIS?
-YES
-NO

DIAGNOSIS TERTIARY LEVEL?
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

TREATMENT (TEXT FIELD)?
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)
(TEXT FIELD 4)
(TEXT FIELD 5)

INWARD EVACUATION

WAS EVACUATION APPROPRIATE?
-YES
-NO
EXPLAIN (Text Field)

EVACUTION WOULD HAVE BEEN AVOIDED WITH MORE EXPERIENCED PHC PROVIDER AT REFERRING SITE"
- YES
- NO

WAS PRE-EVACUATION TREATMENT APPROPRIATE?
- YES
- NO
EXPLAIN (Text Field)

IN THE EVENT OF A REFERRAL FOR INVESTIGATION ONLY - WAS THE INVESTIGATION NECESSARY ON CLINICAL GROUNDS?
- YES
- NO

WAS THE EVACUATION CAUSED BY INAPPROPRIATED CARE AT THE LEVEL 1 FACILITY?
- YES
- NO

WAS ESCORT SUPPORT APPROPRIATE?
-YES
-NO
EXPLANATION (TEXT FIELD)

DID YOU PROVIDE TELEMEDICINE CONSULTATION FOR THIS PATIENT PRIOR TO ADMISSION?
-YES
ACTIVATES TELEMEDICINE DATABASE
-NO
WOULD TELEMEDICINE HAVE BEEN ADVANTAGEOUS FOR THIS PATIENT?
- YES (ACTIVATES TELEMEDICINE DATABASE)
- NO

DID YOU CONSULT ANOTHER TERTIARY INSTITUTION VIA TELEMEDICINE?
- YES
ACTIVATES TELEMEDICINE DATABASE
- NO

DAILY MEDICINE QUESTIONS

1. SUBSPECIALISTS (TEXT FIELDS MAY BE USED DAILY)?
TEXT FIELD #1
TEXT FIELD #2
TEXT FIELD #3
TEXT FIELD OTHER (LARGER FIELD FOR MULTIPLE ENTRIES)

2. WAS TELEMEDICINE USED FOR THIS PATIENT DURING THIS ADMISSION?
-YES
ACCESS TELEMEDICINE DATABASE
- NO

3. IS PATIENT READY FOR RETURN TO UNIT TODAY?
- YES
- NO

4. DISCHARGE: (DATE FIELD)
    a. RETURN TO UNIT
        - YES
            1. FULL DUTY?
                - YES
                - NO
                    SPECIFY RESTRICTION (Text Field)
        - NO

    b. WAS THE PATIENT EVACUATED TO ANOTHER FACILITY?
        - Yes
            1. LOCATION:
                i. BOB
                ii. MASH
                iii. CSH
                iv. LRMC
                v. OTHER (Text)

            2. ESCORTS
                (TEXT FIELD 1)
                (TEXT FIELD 2)
                (TEXT FIELD 3)
                (TEXT FIELD 4)
                (TEXT FIELD 5)

            3. MODE OF TRANSPORT
                i. AIR
                ii. AMBULANCE
                iii. OTHER ROAD VEHICLE
                iv. NON US TRANSPORT
                    SPECIFY (Text Field)
        -NO

DO YOU THINK THERE WAS A PSYCHOLOGICAL COMPONENT PROMOTING THE EVACUATION OF THIS PATIENT (scored from 0-10, 0 being nonexistent, 10 being very high)? Numeric Field

‡SUBSTANCE ABUSE *(DO WE NEED THIS?)*

‡TRIGGER DR. MANNUS QUESTIONNAIRE FROM FT BENNING
‡ETOH
‡OTHER SUBSTANCE

MEDICAL ATTRITION, TERTIARY CARE - NONBATTLE INJURY

EVACUATION SITE IDENTIFICATION (PROGRAM AUTOMATIC, DATABASE NAME?)

CHANGE IN STATUS?
- -YES
  - ON TO THE NEXT
- -NO

ADMISSION DATE: (DATE FIELD)

DO YOU AGREE WITH THE REFERRING DIAGNOSIS?
- -YES
- -NO

DIAGNOSIS TERTIARY LEVEL?
- (TEXT FIELD 1)
- (TEXT FIELD 2)
- (TEXT FIELD 3)
- (TEXT FIELD 4)
- (TEXT FIELD 5)

TREATMENT (TEXT FIELD)?
- (TEXT FIELD 1)
- (TEXT FIELD 2)
- (TEXT FIELD 3)
- (TEXT FIELD 4)
- (TEXT FIELD 5)

INWARD EVACUATION

WAS EVACUATION APPROPRIATE?
- -YES
- -NO
  - EXPLAIN (Text Field)

EVACUTION WOULD HAVE BEEN AVOIDED WITH MORE EXPERIENCED PHC PROVIDER AT REFERRING SITE"
- - YES
- - NO

WAS PRE-EVACUATION TREATMENT APPROPRIATE?
- - YES
- - NO
  - EXPLAIN (Text Field)

IN THE EVENT OF A REFERRAL FOR INVESTIGATION ONLY - WAS THE INVESTIGATION NECESSARY ON CLINICAL GROUNDS?
- - YES
- - NO

WAS THE EVACUATION CAUSED BY INAPPROPRIATED CARE AT THE LEVEL 1 FACILITY?
- YES
- NO

WAS ESCORT SUPPORT APPROPRIATE?
-YES
-NO
EXPLANATION (TEXT FIELD)

WAS URGENCY APPROPRIATE?
-YES
-NO

WAS ESCORT SUPPORT APPROPRIATE?
-YES
-NO
EXPLANATION (TEXT FIELD)

DID YOU PROVIDE TELEMEDICINE CONSULTATION FOR THIS PATIENT PRIOR TO ADMISSION?
-YES
ACTIVATES TELEMEDICINE DATABASE
-NO
WOULD TELEMEDICINE HAVE BEEN ADVANTAGEOUS FOR THIS PATIENT?
- YES (ACTIVATES TELEMEDICINE DATABASE)
- NO

DID YOU CONSULT ANOTHER TERTIARY INSTITUTION VIA TELEMEDICINE?
- YES
ACTIVATES TELEMEDICINE DATABASE
- NO

DAILY MEDICINE QUESTIONS

1. SUBSPECIALISTS (TEXT FIELDS MAY BE USED DAILY)?
TEXT FIELD #1
TEXT FIELD #2
TEXT FIELD #3
TEXT FIELD OTHER (LARGER FIELD FOR MULTIPLE ENTRIES)

2. SURGICAL PROCEDURES CARRIED OUT IN THE LAST 24 HRS
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)

3. WAS TELEMEDICINE USED FOR THIS PATIENT DURING THIS ADMISSION?
-YES
ACCESS TELEMEDICINE DATABASE
- NO

4. IS PATIENT READY FOR RETURN TO UNIT TODAY?
    - YES
    - NO

5. DISCHARGE: (DATE FIELD)
    a. RETURN TO UNIT
        - YES
            1. FULL DUTY?
                - YES
                - NO
                    SPECIFY RESTRICTION (Text Field)
        - NO
    b. WAS THE PATIENT EVACUATED TO ANOTHER FACILITY?
        - YES
            1. LOCATION:
                i. BOB
                ii. MASH
                iii. CSH
                iv. LRMC
                v. OTHER (Text)

            2. ESCORTS
                (TEXT FIELD 1)
                (TEXT FIELD 2)
                (TEXT FIELD 3)
                (TEXT FIELD 4)
                (TEXT FIELD 5)

            3. MODE OF TRANSPORT
                i. AIR
                ii. AMBULANCE
                iii. OTHER ROAD VEHICLE
                iv. NON US TRANSPORT
                    SPECIFY (Text Field)
        -NO

DO YOU THINK THERE WAS A PSYCHOLOGICAL COMPONENT PROMOTING THE EVACUATION OF THIS PATIENT (scored from 0-10, 0 being nonexistent, 10 being very high)? Numeric Field

IS THE PATIENT FIT TO RETURN TO FULL DUTIES TODAY?
    - YES
    - NO

MEDICAL ATTRITION, TERTIARY CARE - PSYCHIATRIC

DIAGNOSIS (TEXT FIELD)

WAS EVACUATION APPROPRIATE?
- YES
- NO
  EXPLAIN (TEXT FIELD)

WAS PRE-EVACUATION TREATMENT APPROPRIATE?
- YES
- NO
  EXPLAIN(TEXT FIELD)

WAS PATIENT MENTALLY FIT TO DEPLOY?
- YES
- NO

WAS CURRENT CONDITION PREDICTABLE PRIOR TO DEPLOYMENT?
a. VERY LIKELY
b. POSSIBLE
c. UNLIKELY
d. UNABLE TO DETERMINE

TO WHAT EXTENT WAS THE DEPLOYMENT ITSELF AN ETIOLOGIC FACTOR?
a. ONLY FACTOR
b. MAJOR FACTOR
c. SIGNIFICANT FACTOR
d. MINOR / IRRELEVANT FACTOR

TO WHAT EXTENT WERE HOME CIRCUMSTANCES AN ETIOLOGIC FACTOR?
a. ONLY FACTOR
b. MAJOR FACTOR
c. SIGNIFICANT FACTOR
d. MINOR / IRRELEVANT FACTOR

TO WHAT EXTENT WERE UNIT MORALE ISSUES AN ETIOLOGIC FACTOR?
a. ONLY FACTOR
b. MAJOR FACTOR
c. SIGNIFICANT FACTOR
d. MINOR / IRRELEVANT FACTOR

WAS TELEMEDICINE AVAILABLE?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
  WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION?
  - YES
  - NO

DATE FIT TO RETURN TO RESTRICTED DUTIES (DATE FIELD)

DATE FIT TO RETURN TO FULL DUTIES (DATE FIELD)

DATE EVACUATED FROM THEATER (DATE FIELD)

SPECIAL CIRCUMSTANCES (TEXT FIELD)

MEDICAL ATTRITION, TERTIARY CARE - BATTLE INJURY

EVACUATION SITE IDENTIFICATION (PROGRAM AUTOMATIC, DATABASE NAME?)

CHANGE IN STATUS?
- -YES
  - ON TO THE NEXT
- -NO

ADMISSION DATE: (DATE FIELD)

DO YOU AGREE WITH THE REFERRING DIAGNOSIS?
- -YES
- -NO

DIAGNOSIS TERTIARY LEVEL?
- (TEXT FIELD 1)
- (TEXT FIELD 2)
- (TEXT FIELD 3)
- (TEXT FIELD 4)
- (TEXT FIELD 5)

TREATMENT (TEXT FIELD)?
- (TEXT FIELD 1)
- (TEXT FIELD 2)
- (TEXT FIELD 3)
- (TEXT FIELD 4)
- (TEXT FIELD 5)

INWARD EVACUATION

WAS EVACUATION APPROPRIATE?
- -YES
- -NO
  - EXPLAIN (Text Field)

EVACUTION WOULD HAVE BEEN AVOIDED WITH MORE EXPERIENCED PHC PROVIDER AT REFERRING SITE"
- - YES
- - NO

WAS PRE-EVACUATION TREATMENT APPROPRIATE?
- - YES
- - NO
  - EXPLAIN (Text Field)

IN THE EVENT OF A REFERRAL FOR INVESTIGATION ONLY - WAS THE INVESTIGATION NECESSARY ON CLINICAL GROUNDS?
- - YES
- - NO

WAS THE EVACUATION CAUSED BY INAPPROPRIATED CARE AT THE LEVEL 1 FACILITY?
- YES
- NO

WAS ESCORT SUPPORT APPROPRIATE?
-YES
-NO
EXPLANATION (TEXT FIELD)

WAS URGENCY APPROPRIATE?
-YES
-NO

WAS ESCORT SUPPORT APPROPRIATE?
-YES
-NO
EXPLANATION (TEXT FIELD)

DID YOU PROVIDE TELEMEDICINE CONSULTATION FOR THIS PATIENT PRIOR TO ADMISSION?
-YES
ACTIVATES TELEMEDICINE DATABASE
-NO
WOULD TELEMEDICINE HAVE BEEN ADVANTAGEOUS FOR THIS PATIENT?
- YES (ACTIVATES TELEMEDICINE DATABASE)
- NO

DID YOU CONSULT ANOTHER TERTIARY INSTITUTION VIA TELEMEDICINE?
- YES
ACTIVATES TELEMEDICINE DATABASE
- NO

DAILY MEDICINE QUESTIONS

1. SUBSPECIALISTS (TEXT FIELDS MAY BE USED DAILY)?
TEXT FIELD #1
TEXT FIELD #2
TEXT FIELD #3
TEXT FIELD OTHER (LARGER FIELD FOR MULTIPLE ENTRIES)

2. SURGICAL PROCEDURES CARRIED OUT IN THE LAST 24 HRS
(TEXT FIELD 1)
(TEXT FIELD 2)
(TEXT FIELD 3)

3. WAS TELEMEDICINE USED FOR THIS PATIENT DURING THIS ADMISSION?
-YES
ACCESS TELEMEDICINE DATABASE
- NO

EVACUATION

WAS THE PATIENT EVACUATED ON A ROUTINE BASIS?
- YES
- NO

WAS THE PATIENT EVACUATED AS AN EMERGENCY?
- YES
- NO

MODE OF TRANSPORT
a. AIR
b. AMBULANCE
c. OTHER ROAD VEHICLE
d. NON US TRANSPORT (SPECIFY - TEXT)

SOLE USE OF TRANSPORT
- YES
- NO

MILITARY ESCORT
- YES
  SIZE
- NO

WAS TELEMEDICINE (VTC) USED FOR THIS SERVICE MEMBER?
- YES
  ACCESS TO TELEMEDICINE DATABASE
- NO

SPECIAL FEATURES (NOT TO INCLUDE DETAILS OF THE COMPASSIONATE CASE ITSELF UNLESS IT HAS A BEARING ON WHETHER THE LOSS SHOULD HAVE OCCURRED)

(TEXT FIELD)

DISCIPLINARY ACTION

- NO
- YES **POP UP MENU**
  a. NATURE OF ACTION
  b. JUDICIAL
  c. NON-JUDICIAL

  a. CAUSE OF ACTION
    1. AWOL
    2. ALTERCATION
    3. ALCOHOL
    4. DRUG RELATED
    5. FRATERNIZATION
    6. INSUBORDINATION
    7. OTHER----------SPECIFY (TEXT)

4. IS PATIENT READY FOR RETURN TO UNIT TODAY?
    - YES
    - NO

5. DISCHARGE: (DATE FIELD)
    a. RETURN TO UNIT
        - YES
            1. FULL DUTY?
                - YES
                - NO
                    SPECIFY RESTRICTION (Text Field)
        - NO
    b. WAS THE PATIENT EVACUATED TO ANOTHER FACILITY?
        - YES
            1. LOCATION:
                i. BOB
                ii. MASH
                iii. CSH
                iv. LRMC
                v. OTHER (Text)

            2. ESCORTS
                (TEXT FIELD 1)
                (TEXT FIELD 2)
                (TEXT FIELD 3)
                (TEXT FIELD 4)
                (TEXT FIELD 5)

            3. MODE OF TRANSPORT
                i. AIR
                ii. AMBULANCE
                iii. OTHER ROAD VEHICLE
                iv. NON US TRANSPORT
                    SPECIFY (Text Field)
        -NO

DO YOU THINK THERE WAS A PSYCHOLOGICAL COMPONENT PROMOTING THE EVACUATION OF THIS PATIENT (scored from 0-10, 0 being nonexistent, 10 being very high)? Numeric Field

MEDICAL ATTRITION, TERTIARY CARE - DENTAL

DIAGNOSIS (TEXT FIELD)

WAS EVACUATION APPROPRIATE?
- YES
- NO
  EXPLAIN (TEXT FIELD)

WAS PRE-EVACUATION TREATMENT APPROPRIATE?
- YES
- NO
  EXPLAIN(TEXT FIELD)

WAS PATIENT DENTALLY FIT TO DEPLOY?
- YES
- NO

WAS TELEDENTISTRY AVAILABLE?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
  WOULD TELEDENTISTRY HAVE PREVENTED THIS EVACUATION?
  - YES
  - NO

DATE FIT TO RETURN TO FULL DUTIES (DATE FIELD)?

DAILY MEDICINE QUESTIONS

1. SUBSPECIALISTS (TEXT FIELDS MAY BE USED DAILY)?
   TEXT FIELD #1
   TEXT FIELD #2
   TEXT FIELD #3
   TEXT FIELD OTHER (LARGER FIELD FOR MULTIPLE ENTRIES)

2. SURGICAL PROCEDURES CARRIED OUT IN THE LAST 24 HRS
   (TEXT FIELD 1)
   (TEXT FIELD 2)
   (TEXT FIELD 3)

3. WAS TELEMEDICINE USED FOR THIS PATIENT DURING THIS ADMISSION?
   -YES
     ACCESS TELEMEDICINE DATABASE
   - NO

4. IS PATIENT READY FOR RETURN TO UNIT TODAY?
   - YES
   - NO

5. DISCHARGE: (DATE FIELD)
    a. RETURN TO UNIT
        - YES
            1. FULL DUTY?
                - YES
                - NO
                    SPECIFY RESTRICTION (Text Field)
        - NO

    b. WAS THE PATIENT EVACUATED TO ANOTHER FACILITY?
        - YES
            1. LOCATION:
                i. BOB
                ii. MASH
                iii. CSH
                iv. LRMC
                v. OTHER (Text)

            2. ESCORTS
                (TEXT FIELD 1)
                (TEXT FIELD 2)
                (TEXT FIELD 3)
                (TEXT FIELD 4)
                (TEXT FIELD 5)

            3. MODE OF TRANSPORT
                i. AIR
                ii. AMBULANCE
                iii. OTHER ROAD VEHICLE
                iv. NON US TRANSPORT
                    SPECIFY (Text Field)
        -NO

DO YOU THINK THERE WAS A PSYCHOLOGICAL COMPONENT PROMOTING THE EVACUATION OF THIS PATIENT (scored from 0-10, 0 being nonexistent, 10 being very high)? Numeric Field

TELEMEDICINE

WAS TELEMEDICINE AVAILABLE FROM THE PRIMARY FACILITY?
- YES (OPENS TELEMEDICINE FIELDS)
- NO
    WOULD TELEMEDICINE HAVE PREVENTED THIS EVACUATION
        - YES (OPENS TELEMEDICINE FIELDS)
        - NO

DID EQUIPMENT OR OTHER FAILURE LEAD TO TELEMEDICINE NOT BEING USED
- YES (OPENS TELEMEDICINE FIELDS)
- NO

COMMENTS (Text Field)

ADMINISTRATIVE LOSS

Member lost to unit for > 24 hours
Information obtained from personnel or unit status report

a. FOB
b. BOB
c. MSH
d. CSH
e. LARMC
f. CONUS

COMPASSIONATE

CATEGORY (Text Field)

DEATH IN FAMILY
- YES
    a. RELATIONSHIP TO SERVICE MEMBER (TEXT FIELD)
- NO

ILLNESS IN FAMILY
- YES
    a. PREDICTABLE PRIOR TO DEPLOYMENT
        - YES
            i. LIKELY
            ii. POSSIBLE
            iii. CONSIDERED UNLIKELY
        - NO

    b. RELATIONSHIP TO SERVICE MEMBER (TEXT FIELD)

- NO

DATE OF OCCURRENCE (DATE FIELD)

DATE OF REQUEST (DATE FIELD)

DATE LEFT UNIT (DATE FIELD)

REASSIGNED?
- YES
- NO
    a. DATE ARRIVED HOME (DATE FIELD)
    b. DATE LEFT HOME (DATE FIELD)
    c. DATE ARRIVED UNIT (DATE FIELD)

EVACUATION

WAS THE PATIENT EVACUATED ON A ROUTINE BASIS?
- YES
- NO

WAS THE PATIENT EVACUATED AS AN EMERGENCY?
- YES
- NO

MODE OF TRANSPORT
a. AIR
b. AMBULANCE
c. OTHER ROAD VEHICLE
d. NON US TRANSPORT (SPECIFY - TEXT)

SOLE USE OF TRANSPORT
- YES
- NO

MILITARY ESCORT
- YES
  SIZE
- NO

WAS TELEMEDICINE (VTC) USED FOR THIS SERVICE MEMBER?
- YES
  ACCESS TO TELEMEDICINE DATABASE
- NO

SPECIAL FEATURES (NOT TO INCLUDE DETAILS OF THE COMPASSIONATE CASE ITSELF UNLESS IT HAS A BEARING ON WHETHER THE LOSS SHOULD HAVE OCCURRED)

(TEXT FIELD)

DISCIPLINARY ACTION

- NO
- YES **POP UP MENU**
  a. NATURE OF ACTION
  b. JUDICIAL
  c. NON-JUDICIAL

  a. CAUSE OF ACTION
    1. AWOL
    2. ALTERCATION
    3. ALCOHOL
    4. DRUG RELATED
    5. FRATERNIZATION
    6. INSUBORDINATION
    7. OTHER----------SPECIFY (TEXT)

R&R/LEAVE
- NO
- YES POP DOWN
    a. LOCATION?
        1. BOSNIA
        2. CROATIA
        3. HUNGARY
        4. GERMANY
        5. EUROPE
        6. CONUS
        7. OTHER----------SPECIFY (TEXT)
    b. SICK ON LEAVE?
        - NO
        - YES
            i. DISPOSITION: TEXT

PERSONNEL ACTION
-NO
- YES
    a. NATURE OF ACTION?
        1. POSTING----------
            i. TEMPORARY
            ii. PERMANENT
            WHERE: TEXT
            AUTHORITY:
                i. COMPANY COMMANDER
                ii. UNIT COMMANDER
                iii. IN THEATER COMMANDER
                iv. CONUS COMMANDER
        2. PROMOTION
            - NO
            - YES
                GRADE: TEXT
        3. RETIREMENT
            - NO
            - YES
                CIRCUMSTANCES: TEXT

ESCORT DUTIES
- NO
- YES
    CIRCUMSTANCES :TEXT

DEPLOYMENT
- NO
- YES
    CIRCUMSTANCES: (TEXT)

RTD DAY: (Date Field)
DAYS AWAY: (Numeric Field)

UNIT ADMINISTRATIVE DATA

Information obtained S1 and S3
COMPLETED ON EACH SUBUNIT DAILY

IDENTIFICATION FIELD (TEXT, FOB-10, BOB-12, ETC.)

LOCATION (TEXT FIELD)

FIXED GPS READING: (NUMERICAL)

DAILY UNIT STRENGTH: (NUMERIC)

ACTIVITY: (TEXT)

MORALE QUESTION: *(TO BE DECIDED UPON)*
UNIT MORALE SURVEY INSTRUMENT GIVEN?
POP UP TRIGGER WRAIR
‡NO
‡YES----------DATE:
NUMBER GIVEN:
NUMBER COMPLETED:
CHAPLAIN:
HOW IS MORALE IN THE UNIT CURRENTLY?
‡POOR
‡FAIR
‡GOOD
‡EXCELLENT
TEXT: